CANRON
NEWS
CANRON LIMITED 1121 PLACE VILLE MARIE, MONTREAL 113, P.Q.

SEPT. 1969 VOLUME 2, NUMBER 2

MAJOR ACQUISITION BY CANRON

For many years Canron, through its Railway Division and subsidiary, Tamper Inc., has been a leading designer and manufacturer of railway track maintenance machinery and equipment which it has marketed principally in North and South America and Australia.

The recent acquisition of the controlling interest in Matisa Matériel Industriel S.A. of Switzerland, makes Canron the world's largest supplier of railway track maintenance equipment and machines.

This acquisition, which complements the activities of Tamper Inc., and offers the opportunity to market the company's railway products through a worldwide sales network, is another forward step in the long range plans of Canron.

Matisa was established in 1945 as a sales and distribution organization for the tampers manufactured by an associated company, Ateliers de Constructions Mécaniques of Renens. In the immediate postwar period, the rapid restoration of Europe's damaged and neglected railway track was vital. Further, the ever-increasing volume of traffic, higher train speeds and a shortage of labour compelled the railways to mechanize track maintenance and renewal work. The increasing demand for maintenance equipment led the company into the manufacture of what is now the Matisa line.

Today, Matisa has more than 800 employees. The company's products are sold all over the world. Its record is one of steady growth and sales now exceed $16,000,000 annually.

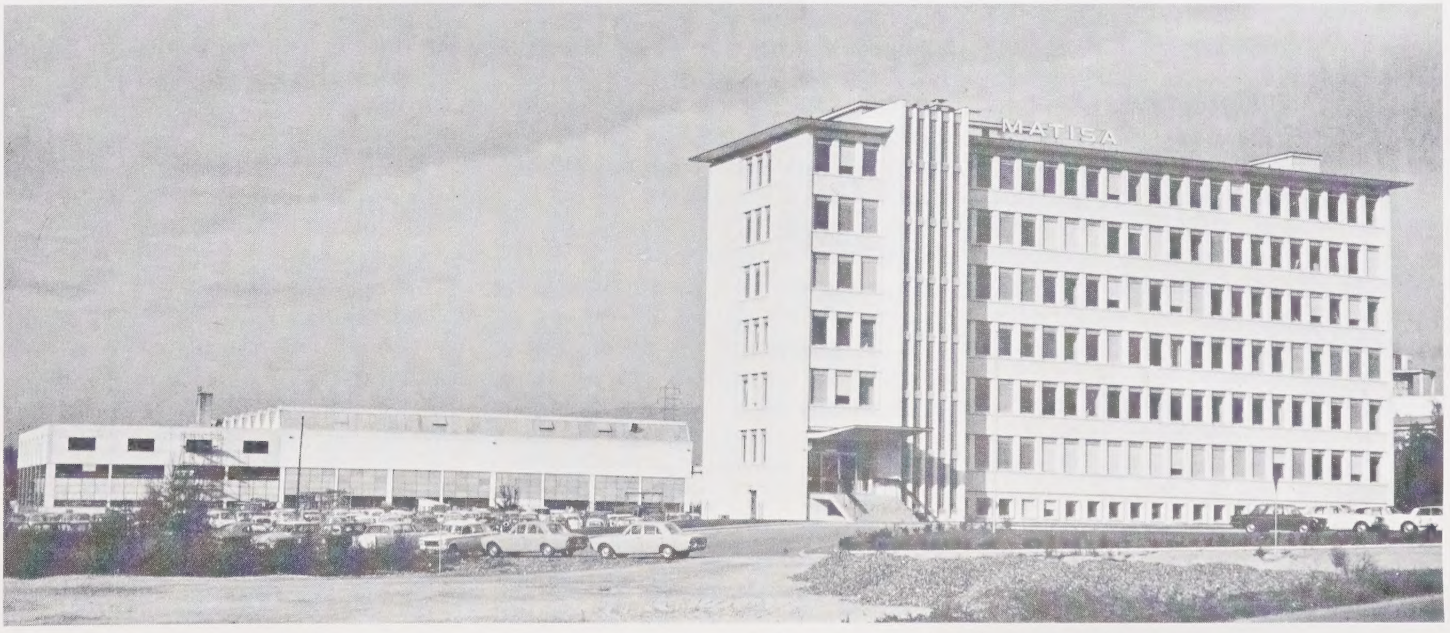
Manufacturing Facilities

Matisa's headquarters are at Crissier, on the outskirts of Lausanne, in an industrial complex completed in 1967. A seven-storey building houses administration, design, research and development, sales and service departments. The plant, with its extensive workshops and test tracks, doubles the company's former production capacity. Ample space is available for future expansion.

Matisa continues to operate its original machine shops at nearby Renens and owns manufacturing facilities in Italy, operated by its subsidiary company, Matema S.p.A., at Pomezia, near Rome.

Products

Matisa's wide range of products



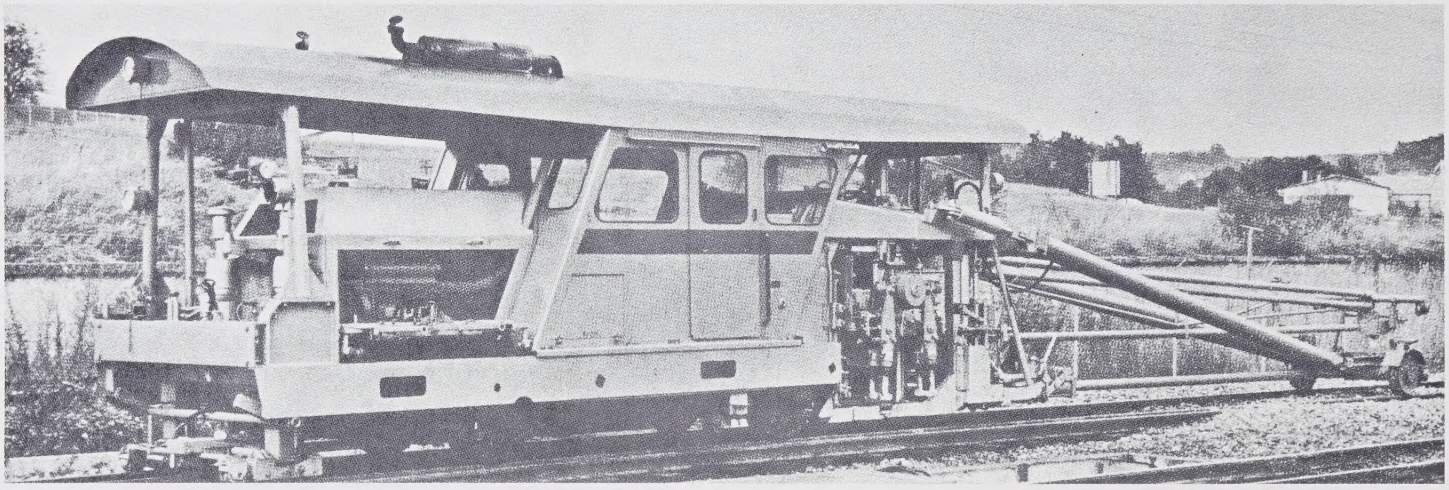
Matisa headquarters in Switzerland. In the foreground, the administration building and, behind, the main works.

include: tampers, ballast cleaners, ballast regulators, track recording trolleys, track lining equipment, automatic ramming and cribbing machines, on-track maintenance tools and equipment for track laying and lifting, switch-heating, and rail welding.
The company has an excellent reputation for technical competence and holds many patents in its field.

Sales and Service

A network of affiliate companies, each with its own technical services, stocks of spare parts and production or assembly workshops, serves markets in South Africa, West Germany, Brazil, France and Great Britain.
A total of 67 branches and agents provide Matisa's customers with technical and commercial services throughout the world.

One of the assembly workshops.



Matisa Tamper - Leveller - Liner, Series 85.

McMASTER MEDICAL CENTRE

New Space Frame Structure Designed for Rapid Change

Today's progress in patient care, hospital management, medical education and research is almost unbelievably rapid. Tomorrow's progress will be even more accelerated.
With these realities in mind, the new McMaster Medical Centre is designed to meet the constant need for change in hospital facilities and environment.

Complete Restructuring Capability

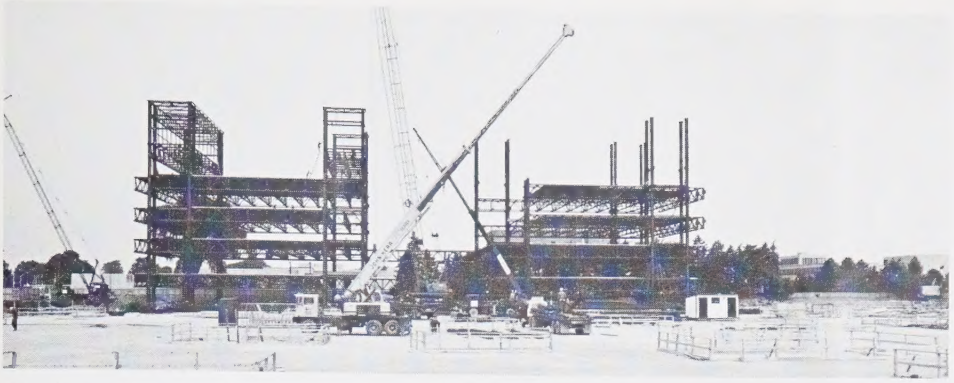
The Centre will combine, in one building, a 420-bed teaching, research and public referral hospital, together with all the typical functions of a university. It is to be constructed so that every shift in the technology of teaching and medicine can be accommodated by an immediate re-organization of the building's interior. The interior environment is to be capable of being completely re-structured, wherever and whenever required.

Organic, Cellular Construction

Consequently, an "organic" building is now taking shape, consisting of over 50 cellular units. Every unit is 94-ft. by 84-ft. in area — all of which is unobstructed space — and is up to five storeys in height.
Each unit is, in effect, structurally independent. This is accomplished by the unique construction method, in which trusses 73-ft. 6 in. long and 7-ft. 6 in. deep are supported by jack trusses to make a one-way space frame.
Support for the jack trusses is provided by column clusters, placed on a grid system and made up of four 2-ft. H-beams, which are joined by 7-ft. 6 in. deep trusses at every floor level.
The units, set side by side and sharing supporting columns, make up a building with an area of 1.4 million sq. ft. that can be made to "grow" vertically or horizontally.

Adaptability of Services

While primary air ducts, plumbing and drainage, together with electrical ducts and trunk lines are permanent fixtures, other services and components — such as lighting, air supply and exhaust registers, electrical outlets, plumbing fixtures, equipment and furnishings, and partitions —



The first of over 40 cellular units take shape for the 1.4-million sq. ft. building.

Viewing a model of McMaster University's Health Sciences Centre are from left to right: Mr. E. H. Zeidler, Architect of Craig, Zeidler & Strong: the Honourable Mathew Dymond, Minister of Health, Province of Ontario; Dr. H. G. Thode, President and Vice-Chancellor of McMaster University; Dr. J. R. Evans, Vice-President of the Faculty of Medicine, McMaster University.

are completely adaptable within the building's framework.

Individual mechanical equipment modules are plugged into each unit and fed through the vertical column clusters. All services for each floor are supplied via the opening in the clusters.

The Building Itself

The "honeycomb" structure will consist, at first, of four levels. The lowest level will house the lecture halls, library, kitchens and cafeteria. The entrance will be on the next level; this floor will comprise administration offices and physical medicine, diagnostic, emergency and treatment facilities. On the third and fourth levels will be located all in-patient units.

Canron's Eastern Structural Division is carrying out the supply and erection of structural steel for the new Centre under a $5,300,000 contract. Approximately 12,000 tons of steel will be used in its construction, which began in June this year and will be completed in December.

To meet this tight schedule, the structure was divided into four quadrants and erection began with a 100-ton crawler and crew. An 85-ton mobile crane then commenced work in another quadrant, to run parallel operations. The basic scheme is to erect the structure from top to bottom in a total of 14 "slices".

Architects for the project are Craig, Zeidler and Strong. Consulting Engineers: Mechanical — G. Granck & Associates; Electrical — J. Chisvin & Associates Ltd.; Structural—J. Maryon & Partners Ltd.

To Tower Above Toronto

Steel construction will begin in January 1970 on the tallest building in Canada, the 56-storey office tower at Canadian Imperial Bank of Commerce's Commerce Court project at King and Bay Streets, Toronto. It will loom 780 feet in height.

Part of its shell skeleton will consist of massive cruciform columns, welded from heavy steel plate and weighing 35 tons. Beams 56 feet long are required for the large open bays on each floor.

Mason-Kiewit is the general contractor of the construction. The $12,-000,000 contract for the fabrication and erection of 30,000 tons of structural steel has been awarded to Dominion Bridge-Canron, a joint venture formed by Canron, Eastern Structural Division and Dominion Bridge.

Fabrication of the steel in the Toronto plants of the two companies is scheduled to begin in November. About 200 workmen in each plant will be employed on the contract for more than 12 months.

Erection will begin in January 1970 and will be completed in the spring of 1971. Up to 200 men will also be employed on the site by the Dominion Bridge - Canron Joint Venture.

Erection is expected to progress at a rate of one floor a week.

Keeping Fan Blades in Circulation

At first sight, a very hard alloy white iron casting seems to have little prospect of success as a material for high speed fan blades — especially when they are subject to severe abrasive attack, which normally causes excessively rapid wear.

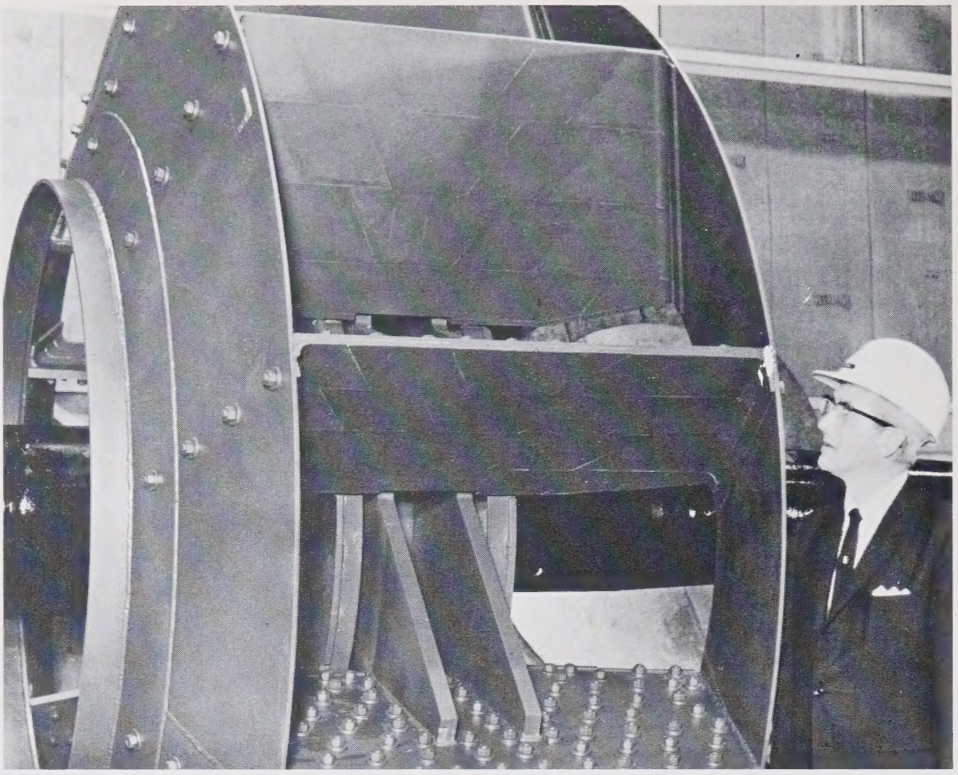
Main drawback to the use of a hard alloy is the extreme brittleness of the material. Even where abrasion-resistant plates are fitted, many fan installations have suffered in the past from frequent, expensive downtime for the replacement of worn parts.

Sheldons Engineering Limited of Galt, Ontario, reports that a Canron advance is providing a new standard of high-speed fan performance under abrasive conditions. Sheldons, a leader in the manufacture of air-moving and air-conditioning equipment, is using Domite-clad fan wheels.

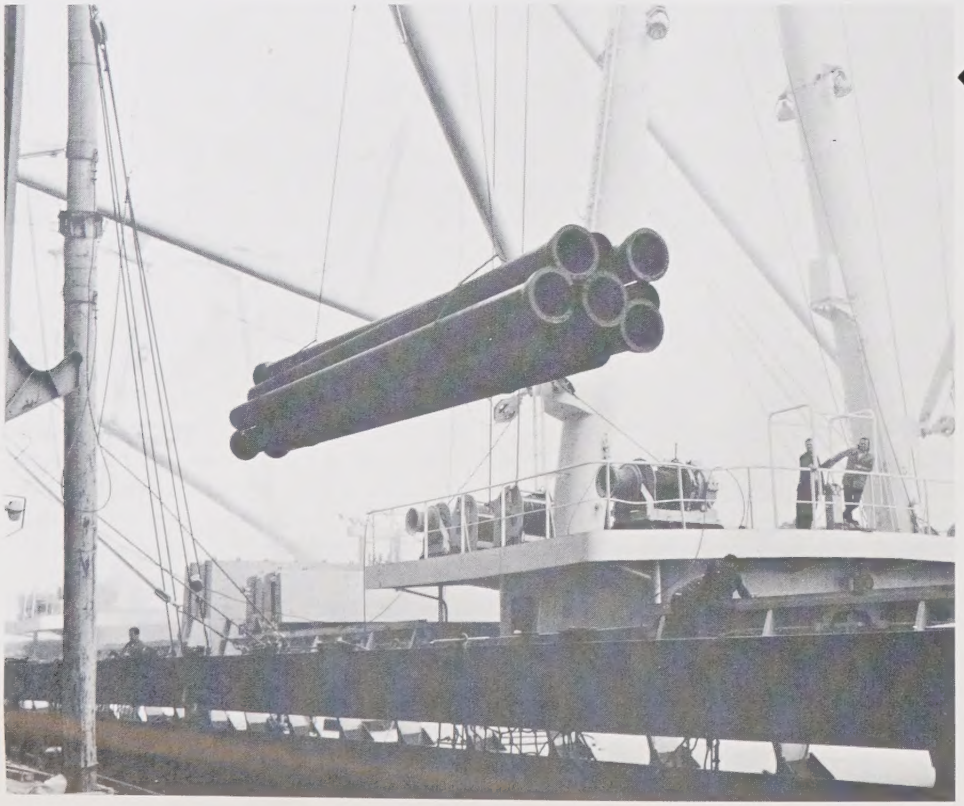
Secret of Canron's patented Domite process is the metallurgical bonding of a ductile weldable mild steel backing plate to the hard, brittle alloy facing. Blades remain serviceable even if the facing fractures. Separation of the white-iron wear surface is positively prevented by the high-strength continuous brazed joint which laminates it to the mild steel backing. By this "fail-safe" characteristic, Domite-clad fans can handle high dust loadings and cut operating costs.

A further advantage of the Domite wear plates is the fact that they are fastened to the fan blade by means of Nelson studs welded to the mild steel backing — a factor which contributes to the high degree of reliability.

Sheldons Domite-clad fan wheels have been proved to give ten times the service of wheels with conventional abrasion-resistant steel wear plates.



Sheldons No. 9040 MH fan wheel equipped with Domite wear plates. One of 3 windbox exhaust units installed at Wabash Mines Ltd., Pelletising Plant, Seven Islands, Quebec, Canada.



Pipe Shipment to Africa

Six hundred tons of Canron ductile iron pipe and fittings were recently shipped from the Port of Montreal to Tunisia. This is the first shipment of Canron pipe to Africa and is for La Régie des Eaux de Tunis (Tunis Waterworks Authority). The project is financed by the Government of Canada within the aid programme of the Canadian International Development Agency.

Canron Motors at Iron Ore Mine

Two 1500 HP "Tamper" synchronous motors manufactured by Canron, Electrical Division, drive each of the huge "Autogenous" mills at Sherman Mines, Temagami, Ontario. The motors are visible at the right. This is one of several types and sizes of "Tamper" motors supplied for the mine which has an annual output of 1,000,000 tons of iron ore pellets.

During the early stages of processing, the mills separate the iron minerals from the crude ore. Material is fed into the mills which, by revolving, cause the ore to tumble and crush itself, hence the term "Autogenous".

▲ *Contractor installs 16-ft. lengths of "Hyprescon" concrete pipe, each weighing 5½ tons, forming part of a four-mile water pipeline.*

Lap weld of pipe takes less than two hours. Two passes finish job, in protected environment, using low hydrogen 7018 rod. Visual inspection is all that is required to check water tightness of joint. ▶

South Peel Pipe Project

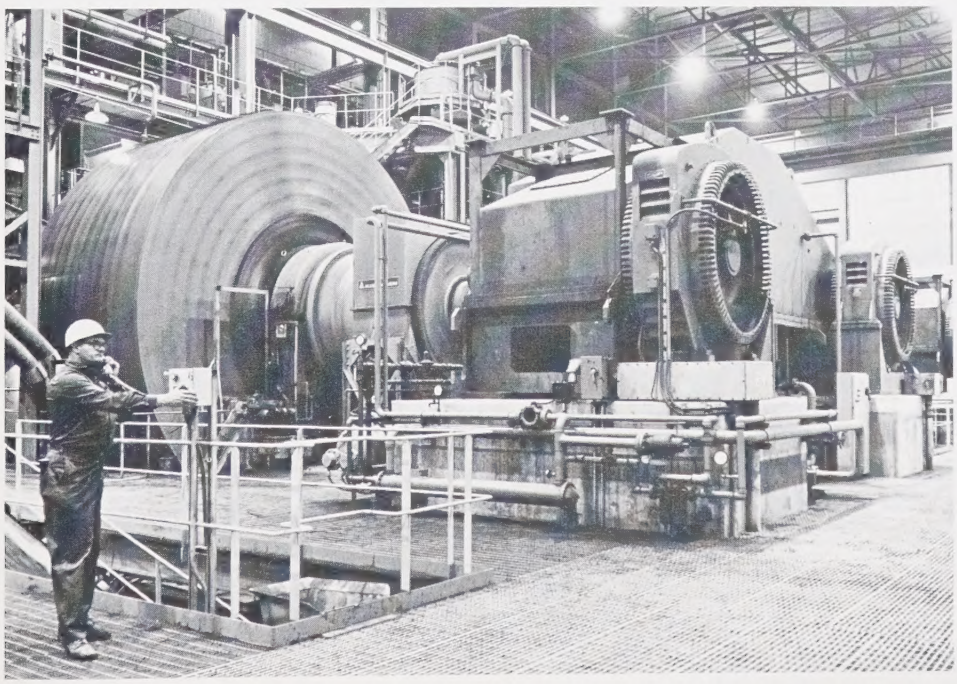
Canron, Pipe Division, is supplying four miles of concrete pipe to link the Hanlan reservoir at Mississauga to the Beckett-Sproule reservoir, near Brampton. This is the initial phase of the South Peel project of the Ontario Water Resources Commission.

Installation began in July and is being carried out by Leo Contracting Co. Ltd., of North York, Toronto. The $1.2 million contract for this section is scheduled for completion in November.

The O.W.R.C. scheme will eventually provide Brampton, Mississauga, Port Credit, Streetsville and Chinguacousy with an integrated water and sewage system at an estimated cost of $88 million. The O.W.R.C. will own and operate the system on behalf of the Province of Ontario and the municipalities will pay for the service on the basis of use.

The Canron product is Hyprescon prestressed embedded cylinder pipe. Four feet in diameter, it consists of a steel cylinder which is embossed in concrete, then wired, and sheathed in concrete. Designed for high pressure applications, it has the further advantage of compactness.

No bulky thrust blocks were required at bends and outlets, since welded joints were used at critical locations to absorb thrust forces. This is of particular importance in the current project, in which the pipe runs beneath much of Ontario's prime farm land; present and future services can be installed so as to use the minimum of right of way.



Safety on the Rise

Drivers arriving at Toronto's Cherry Street Bascule Bridge when it is in the raised position will be stopped by these B & B Electromatic traffic barriers, supplied by Railway & Power Engineering Corporation, Limited.

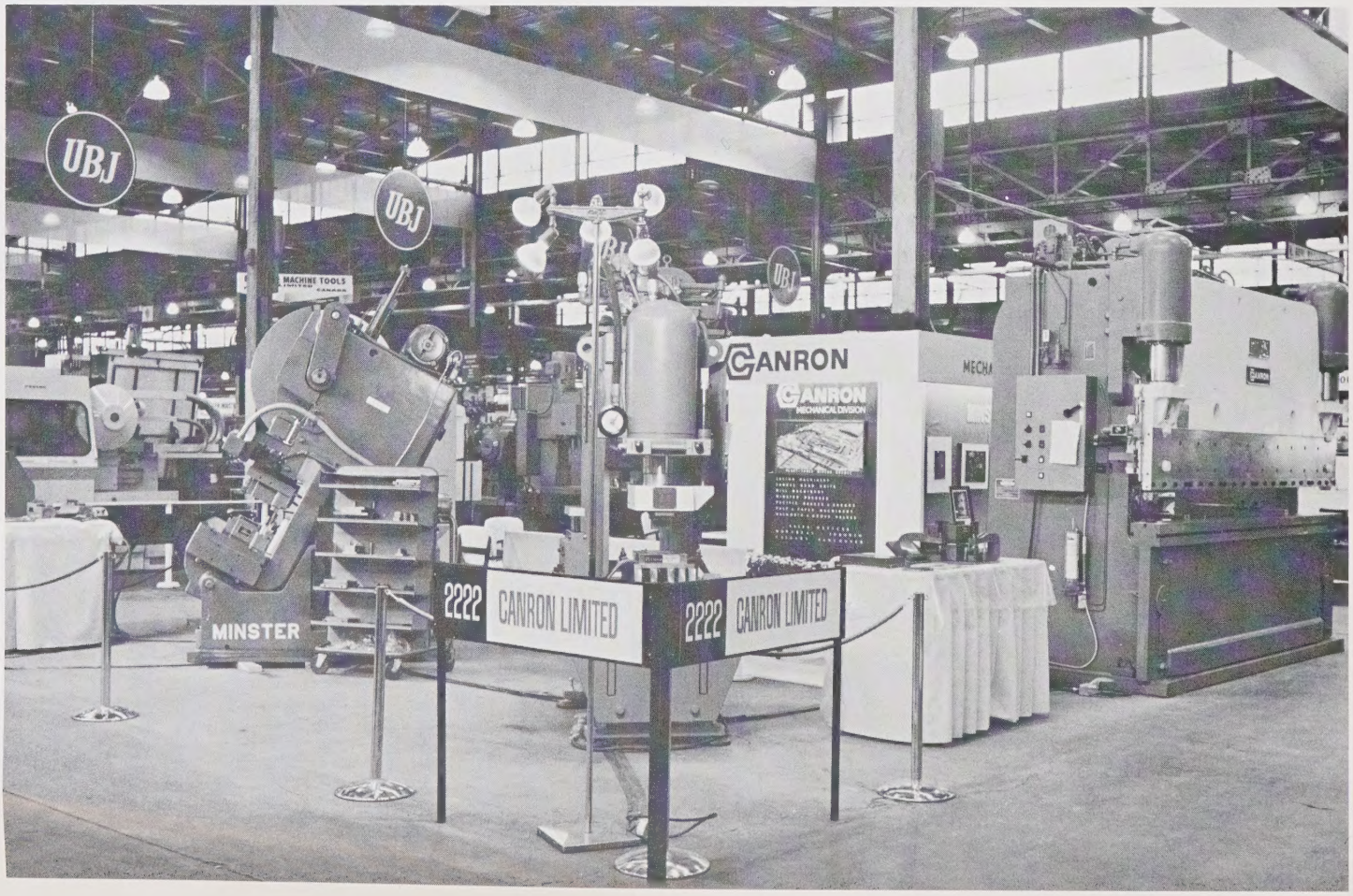
Each barrier has a pivot at one end and a tractor unit at the other. They are interlocked with the bridge control system. In the "road closed" position, as illustrated here, they can withstand a specified 1,000-lb. thrust at the centre to prohibit vehicles from breaking through when the bridge is up. When parked, the barriers lie parallel to the sidewalk.

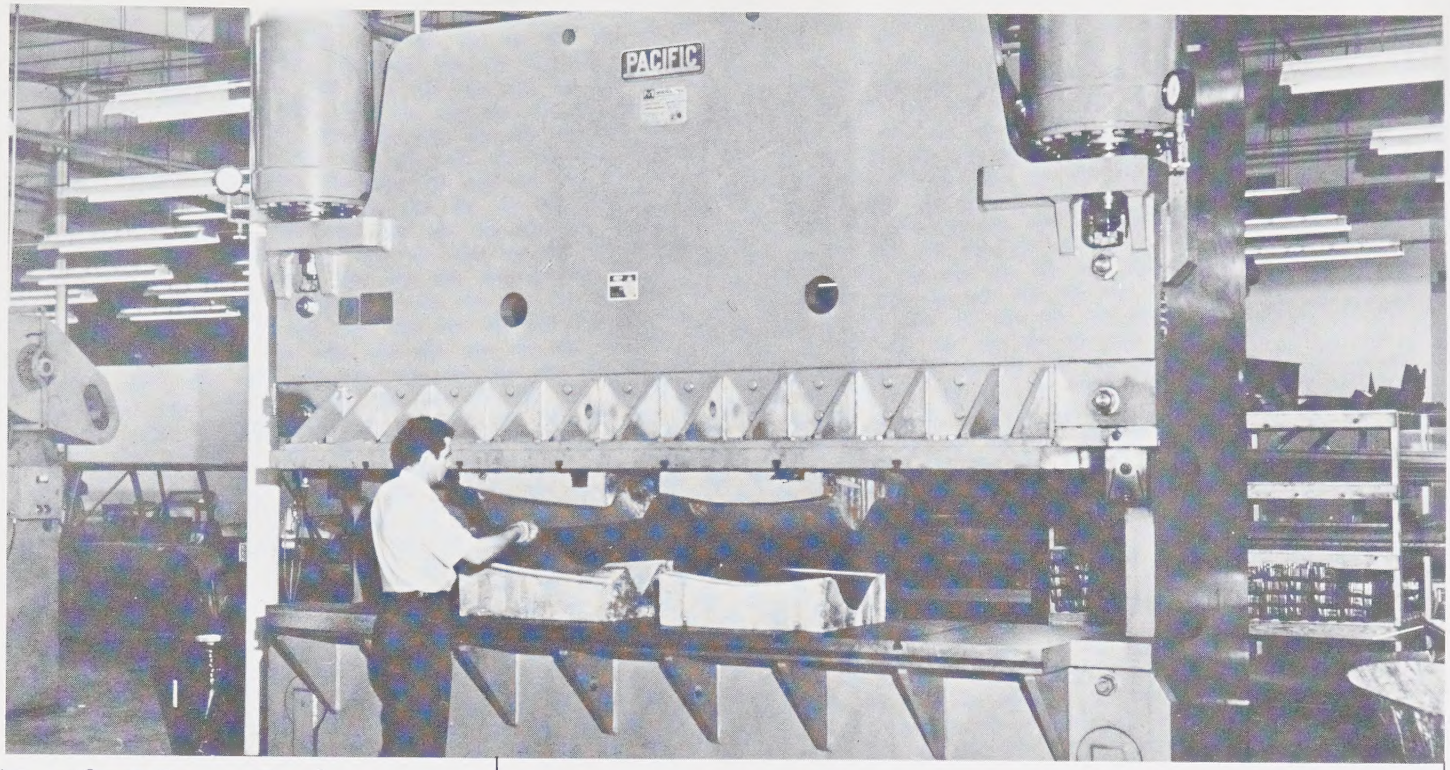
Canron Exhibit at Production Show

"Pacific" and "Minster" machines went on display this year at the Production Show with Canron's biggest exhibit ever.

On 7,200 feet of floor space, three machines were demonstrated in action. They were a "Pacific" 200-12 Press Brake, a "Pacific" 100-ton Pressformer and a "Minster" 60-ton Die-Namic Press. A high degree of interest was shown in all three items. The Canron Mechanical Division exhibit also included a small cinema, in which films of "Pacific" equipment in action were shown.

The 1969 Production Show, held in June at the Canadian National Exhibition grounds, was the largest show of its type in North America with $25,000,000 worth of equipment displayed over ten acres.





"Pacific" Press Brake Builds "Stretch" Limousines

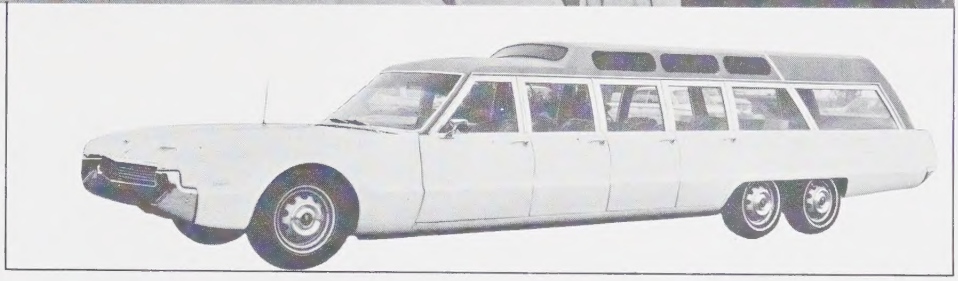
A single "Pacific" Hydraulic Press Brake is forming 100 different automobile body parts — from chassis frames to roof rails — for an Arkansas company which is building "stretch" limousines virtually from scratch.

American Quality Coach Corporation, Blythville, Arkansas, uses the 500-ton, 14-foot "Pacific" Press Brake, equipped with a removable 12" x 36" upper platen, to produce the 28-foot limousines, in runs of 30 vehicles at a time.

As many as three dies are grouped for a single hit; workers can switch dies in 30 minutes or less; stepping of dies is not necessary, as full tonnage is available at any position of stroke.

Fast set-up is facilitated by the 12" stroke length and 18" open height. Again because of the full power delivered throughout the stroke, it is possible to set up dies, or groups of dies, of varying height and draw-depth requirements.

These "stretch" limousines incorporate the Oldsmobile Toronado engine and driveline, frame section, instrument panel, front fender and hood in their designs. Among the added niceties are dual air-conditioning extended head room, plush interior, and tandem rear axle.

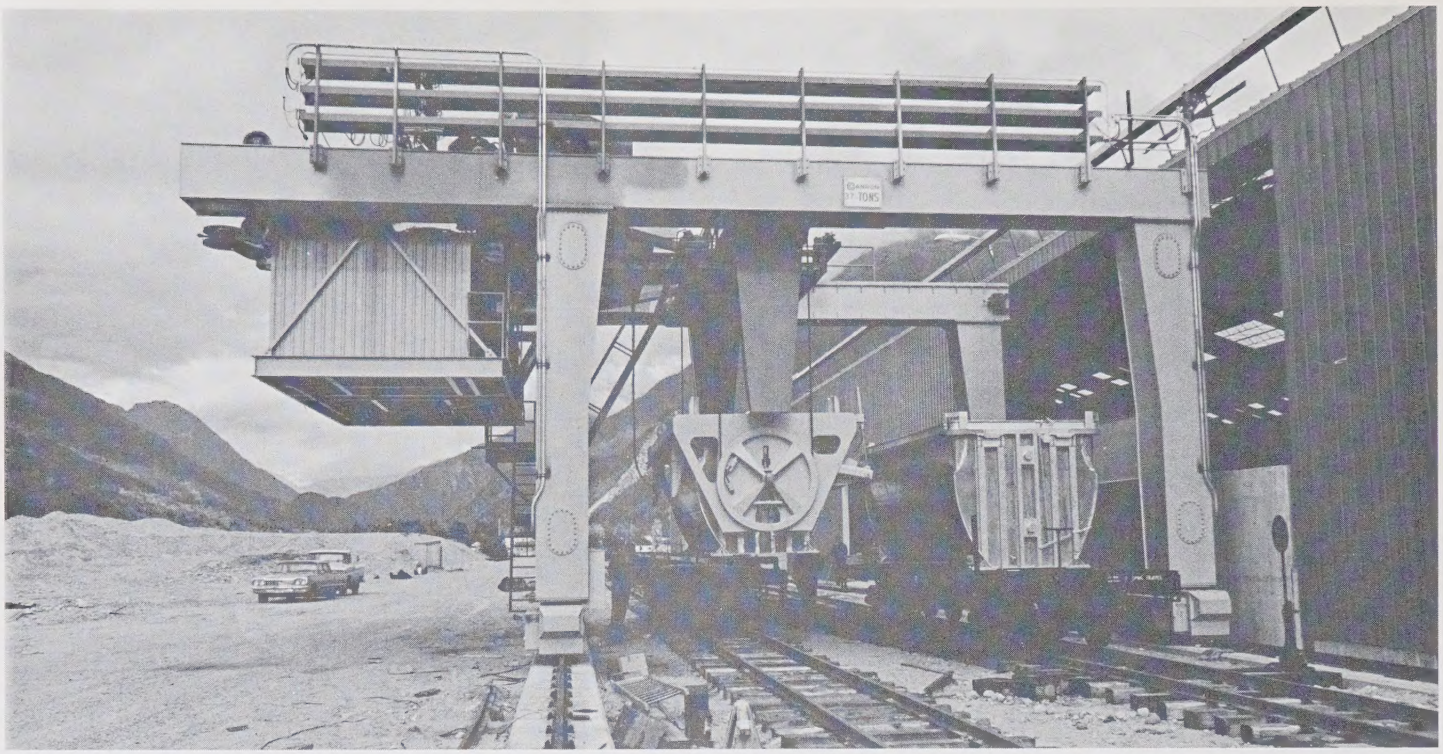


At the Canron display at the Gas Measurement School Meeting of the Canadian Gas Association in Toronto are (left) Milt Craven Jr., of the Grove Valve and Regulator Company, Longview, Texas, and Mr. Ken Iwai, Canron Sales Representative, Toronto.

Measure of Success

Ryerson Polytechnical Institute was recently the scene of a Gas Measurement Meeting, sponsored by the Canadian Gas Association. On show were the products of many of Canada's major manufacturers of gas control equipment.

Canron, Mechanical Division, displayed "Grove" Gate and Ball Valves and Regulators and "Walworth" Plug Valves. All the valves and many of the regulators exhibited were manufactured by Canron at its Trois-Rivières plant.



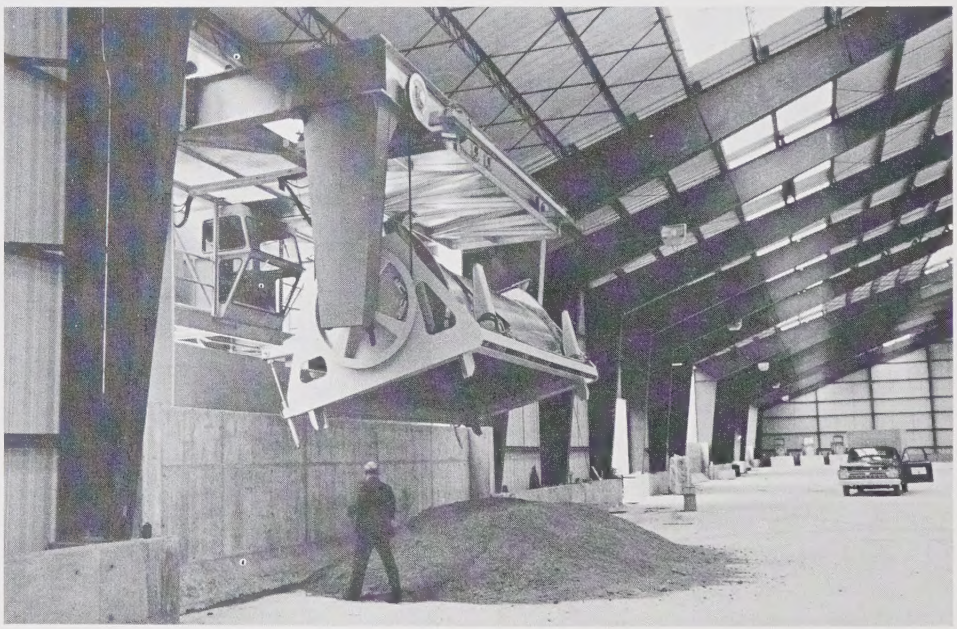
One of two ore containers is in the process of being lifted by the gantry and moved to the opening in the ore shed at the right.

Gantry Dumper for Yukon White Pass

"Designed from scratch", is about the best way of describing how Canron, Western Bridge Division, in conjunction with Wright Engineers Limited built this unique piece of equipment for handling ore containers for the White Pass and Yukon Route.

The problem was to design a gantry which would unload aluminum containers of ore brought by rail car from Anvil Mines to Skagway, Alaska. The ore containers each contain 37½ tons fully laden and have lids. To further complicate the situation, these ore containers had to be run into individual ore shed bays and then with the lids removed be dumped. The procedure had then to be reversed and the ore container brought back out of the shed and replaced in its position on the railway car. While the design of the gantry was relatively routine, it was this phase of developing the unloading and dumping device that required a great deal of design and creative thinking. This entire project was accomplished within 4 months with the first of the gantry members being shipped early in July.

View from the inside of the ore shed, shows dumping operation completed.



All the main motions are operated electro-hydraulically with pneumatic servo-controls in the control cabin of the unloading part of the gantry. This ensures precise control of all motions of the unloader and frees the operator from fatigue. Average time to complete unloading and return cycle is 8 minutes. Capacity of the unloader is approximately 450 tons per hour.

Design of the special aluminum ore containers was by Kirwen Engineering Limited.

CANRON LIMITED

DIVISIONS: Eastern Structural, Electrical, Foundry, Mechanical, Pipe, Plastic Pipe, Railway, Western Bridge.
SUBSIDIARIES: Extruded Plastic Products Limited, Matisa Matériel Industriel S.A., Switzerland, Northern Resins, Limited, Pacific Press & Shear Corp., U.S.A., Railway & Power Engineering Corporation, Tamper, Inc., U.S.A., Tamper (Australia) Pty., Ltd., The Wabi Iron Works, Limited.

CANRON NEWS

CANRON LIMITED 1121 PLACE VILLE MARIE, MONTREAL 113, P.Q.

DECEMBER 1969 — VOLUME 2, NUMBER 3

NEW CANRON PLANT AT NAPANEE, ONTARIO

The "Tamper" line of fractional horsepower motors has been manufactured by our Electrical Division for the past quarter of a century. With steadily increasing demand for these motors, it was decided that the need for increased volume should be met by building a fully-mechanized, high-capacity plant. Construction was started at Napanee, Ontario, late in 1968 and seven months later, in July 1969, the new plant commenced production.

Our new facility plus the existing fractional horsepower motor operation at Lachine, Quebec, provides the company with a manufacturing capacity of several thousands of these motors each day.

The 64,000 sq. ft. plant is located on a 15 acre site, which will allow ample room for future expansion, just south of Highway 401 at Napanee. It is therefore strategically placed not only near sources of material but also in close proximity to major markets for the finished product.

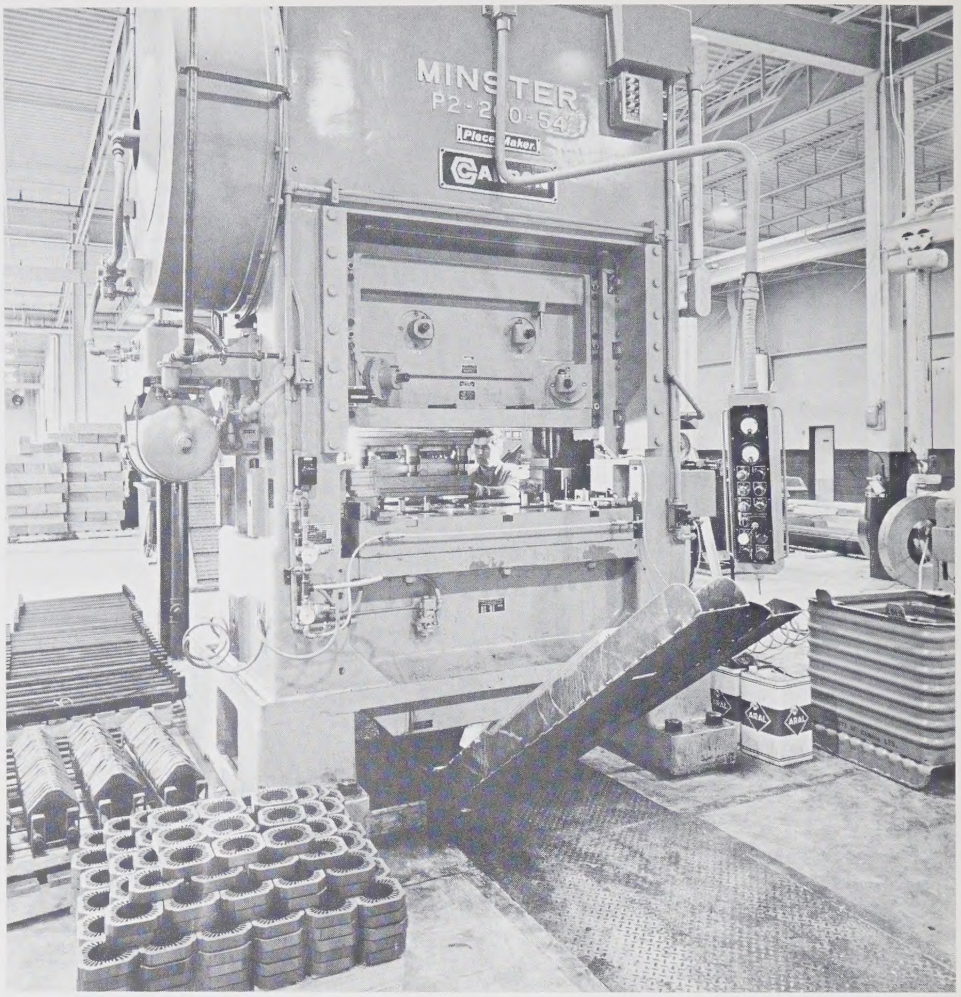
It is interesting to note that the plant includes material from no fewer than five of our operating divisions. The basic steel structure was fabricated and erected by Eastern Structural Division. The Pipe and Plastic Pipe Divisions supplied iron, concrete and plastic pipe. The Mechanical Division supplied a major piece of production machinery and finally, a variety of specialized test and production equipment was provided by the Electrical Division.

The motors are sold to many of the leading manufacturers of home laundry equipment such as washing machines and clothes dryers. The key to success in this market is to produce a high quality product at a competitive price, and with this in mind, the Napanee plant has been equipped with the latest in precision automated equipment.

Electric Division's new plant at Napanee, Ontario, for the production of fractional horsepower motors.

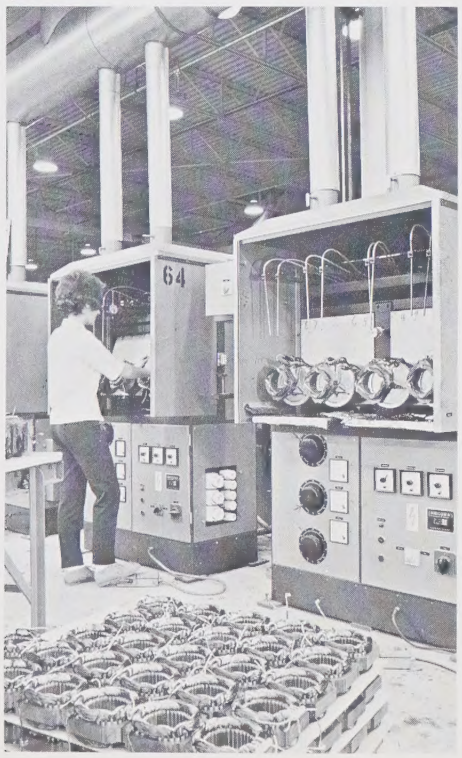
Automation makes low cost, high quality mass production possible, and the Napanee plant has the most modern equipment and processes available in the world today.

Before the final choices of production machinery were made, great care was taken to examine the industry on a world-wide basis. This is reflected in the range of equipment in use at the plant where the very latest machinery from Germany, France, Great Britain, United States and Canada speed the flow of Napanee production. Most of the machines were specially built to meet the specific requirements of the "Tamper" motor. The fullest use was also made of the design and manufacturing capabilities of the Electrical Division's staff and facilities to produce a number of highly specialized and automated machines.

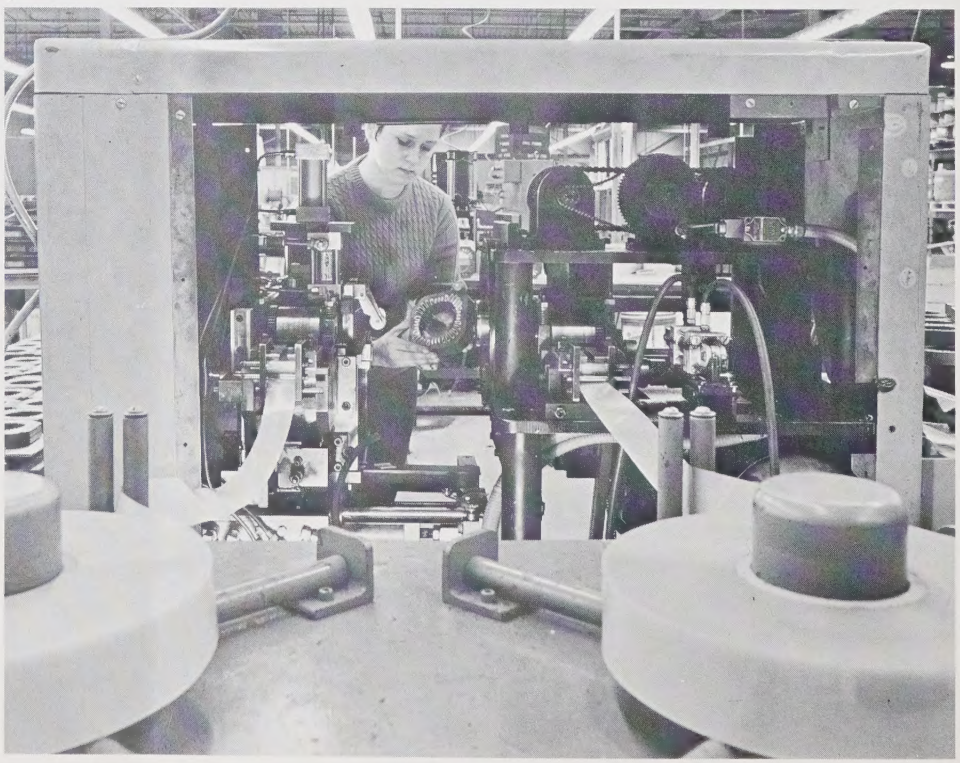


Stator and rotor laminations are produced on this High Speed "Piece-Maker" Press, manufactured by our Mechanical Division in Trois-Rivières, Quebec. Gale Griffin is setting up the carbide die which allows continuous production runs of up to one million pieces . . . all to ultra-precision tolerances.

Lynda McClelland operates the Varnish Treating Equipment. In one setup this unique trickle impregnation process applies and cures the solventless insulating varnish, producing a finished wound stator, ready for final assembly.

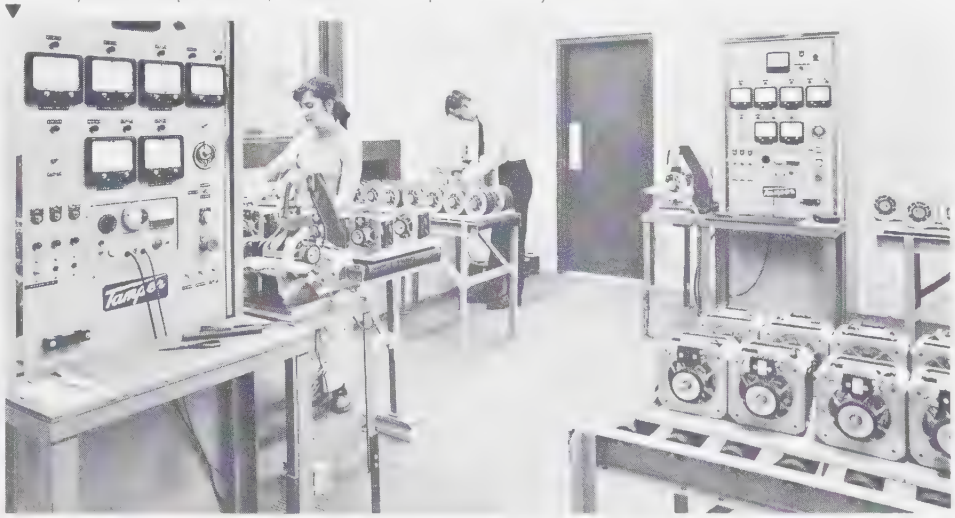


Bonnie Reynolds shows how rolls of polyester tape are converted into a sophisticated insulating system using a highly automated Slot Cell Inserting Machine. At the press of a button, this machine cuts the tape to the length required to exactly fill the five different slot sizes, applies a "cuff" to each end of the slot liner, and finally inserts the insulating material in each stator slot. The entire sequence is done in a matter of seconds.



These finished stators are ready for final assembly . . . right, for the Round Motors, and left, for the Square Motors. In the background can be seen the final assembly area, and the Test Room.

The final and most important Quality Control check is the individual testing of each motor. These fully automated test panels were designed and built by the Electrical Division's Drive Systems Department, and ensure a rapid and complete test of each motor. For maximum efficiency, test area is designed as a "quiet room". Shown here are Richard Bole, the Assembly and Test Foreman, with Gail Haley.

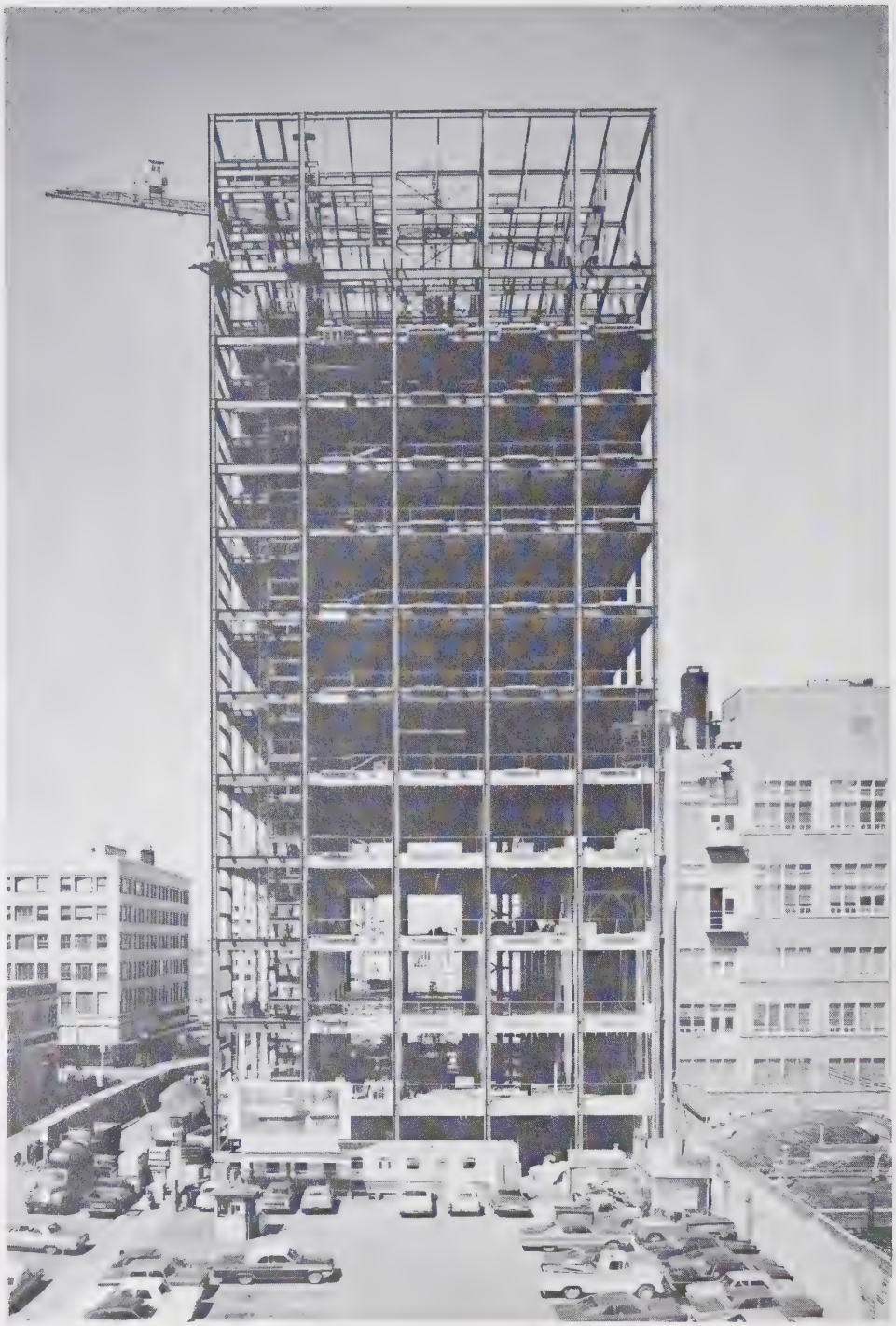


Production at Napanee is divided between the conventional "Round" motors and the newer "Square" motors.

For many applications the "Square" motors provide the best combination of high quality, low cost and maximum performance. Canron is the first Canadian company to design and manufacture this product. Customers acceptance of this new concept in motor design has been excellent and, of course, the motors are fully approved by the Canadian Standards Association.

Mrs. Peck removes the "shims" which ensure that these Square Motors are built with a concentric air gap; this in turn guarantees optimum performance characteristics.

On behalf of the employees the first motor manufactured at Napanee is presented to Plant Manager Jack Jones by Maintenance Foreman Ted Billinton (right) and Gordon Ager (center) Assistant Plant Manager.



14 Storeys High— 20 Storeys Tall

The imposing new Alberta Government Telephones Toll Building, which towers some 240 feet tall in the heart of Edmonton, looks like a 20 storey structure in height. In fact, there are only 14 storeys. But most of them required increased floor-to-ceiling height (16 feet) to accommodate the complex telephone switching equipment that will be housed here.

And that's not the only thing that is different about the Toll Building. It has a gold-painted, impressively autographed section of a steel beam as part of its ninth floor. The special beam, bearing the signatures of officiating dignitaries, was hoisted with due ceremony one day last July, to commemorate the one-millionth linear foot of welded wide flange to be produced by Algoma Steel Corp.

The $1,050,000 A.G.T. contract which called for the fabrication and erection of 2,000 tons of structural steel and miscellaneous iron, was completed by Canron on August 1st, 1969 less than sixteen weeks after the start of erection.

All columns and spandrel beams in the Toll Building are fully welded, to eliminate any need for wind bracing. The first six floors of the structure were raised by means of a 100-ton crawler crane, with a 215 ft. boom and jib. The remaining eight floors — none of which contain columns or beams weighing more than two tons — were raised with a hammer head jacking crane.

Architects for the project were Abugov & Sunderland; the engineers, B. W. Brooker and Associates. General contractors were Burns & Dutton Construction (1962) Ltd.

Arch Bridge Enhances Scenery

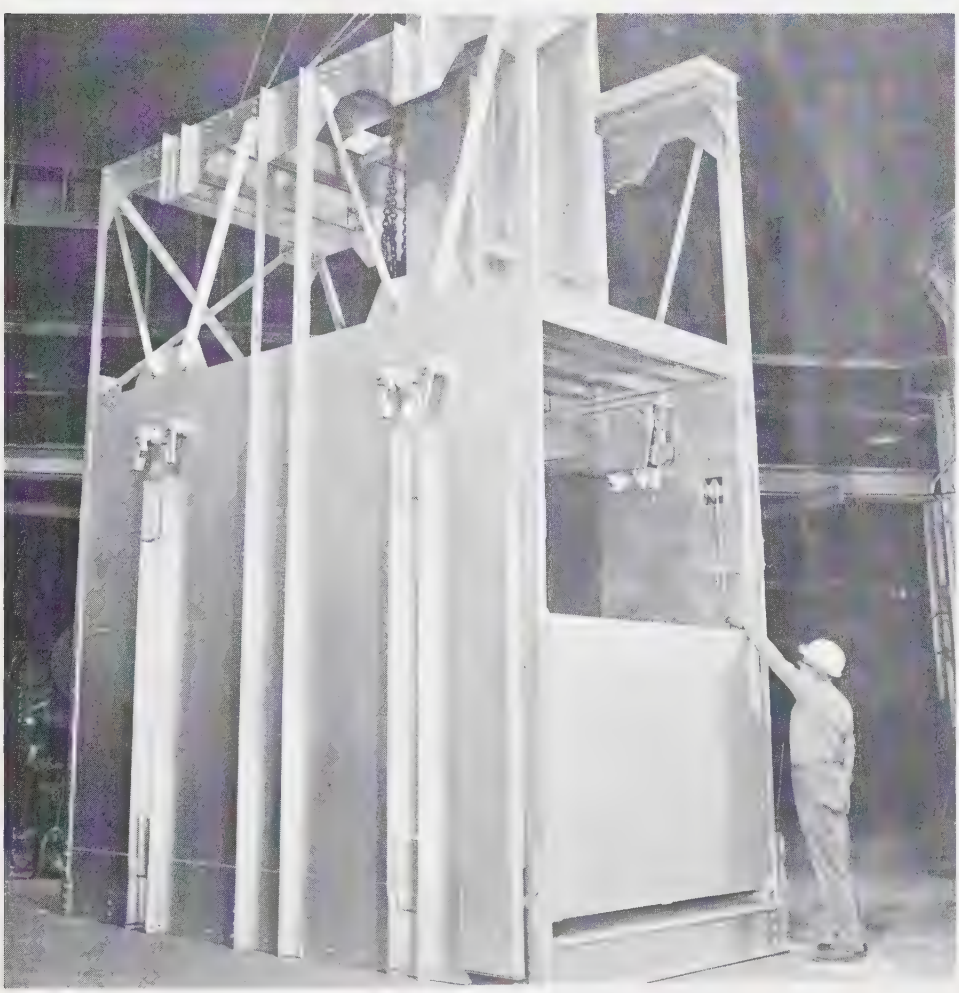
It took about 400 tons of structural steel to erect the elegant Lapointe bridge in the Township of South Plantagenet, Ont. A weathering steel was used, which, when it has taken on its final patina, will blend beautifully with the rural surroundings. Its span is 225 ft., the arch height 50 ft. To ensure a perfect fit-up and to facilitate field erection, every arch and bottom chord was fully assembled at the Eastern Structural Division plant at Rexdale.

New "Pacific" Straightside Press

The versatile all-hydraulic Pacific Straightside Press is the latest addition to the wide range of presses, brakes and shears built by the Mechanical Division at Trois-Rivieres. It has features never before available in hydraulic presses of this kind and is designed for blanking, forming, punching and drawing in the metal working industry.

The 300-ton Straightside Press seen here is presently performing many operations at the Beach Foundry in Ottawa, in the manufacture of their electric and gas ranges (see inset) and furnace products.

Lined up in front of the press are three specimens of its work. Left, a heat exchange baffle plate for a Beach furnace. Centre: a door blank, ready for final forming and showing the cut-out for the window. The blank was produced with one stroke of the Press. Right, a range top, first blanked, then formed on a secondary operation for burner/element location.



Wabi 7-Ton Cage

This single-deck cage, complete with an inspection canopy and roof-mounted timber well, was recently supplied by The Wabi Iron Works to Denison Mines Limited. Designed to operate in an 8′ x 15′ compartment, with 8′6″ clear headroom under a guillotine-type counterweight front door, the 14,000-lb. cage was constructed of steel frame with aluminum sheathing.

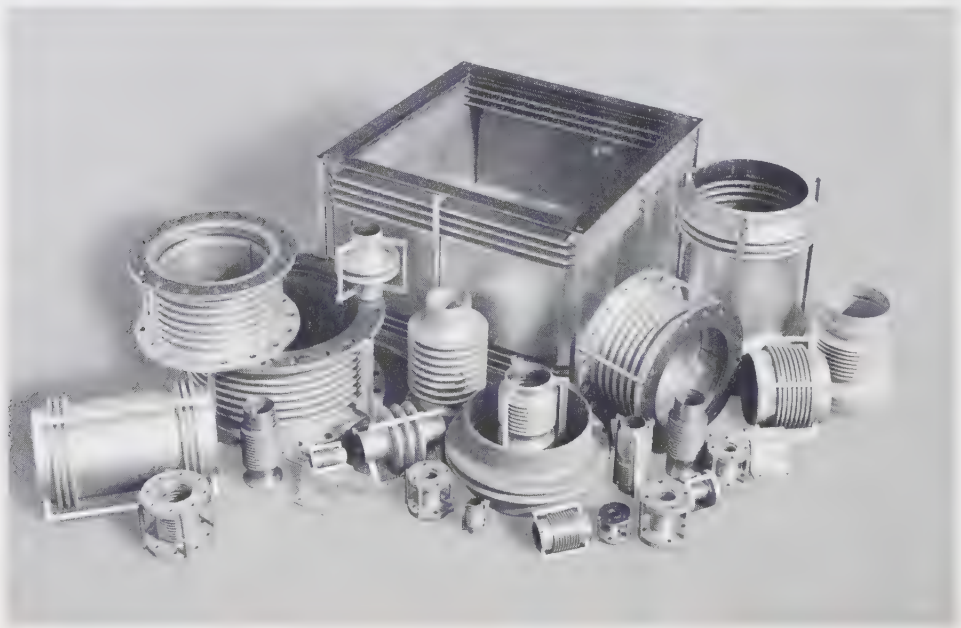
New Ballast Equalizer From Tamper Inc.

The Model BE-17 Ballast Equalizer, just off the assembly line at Tamper's South Carolina plant, is designed to take much of the sweat out of track maintenance and rehabilitation.

This is a rugged, heavy-duty on-track machine whose primary function is to arrange track ballast properly, both immediately before and immediately after tamping.

The pre-tamping procedure ensures that shoulder ballast is properly loosened, uniformly distributed and then placed at the correct depth over the ties. Once tamping is completed, any excess material is then placed on the shoulders and, if necessary, re-distributed. Finally, the BE-17 sweeps tie tops and establishes a toe line at the outer edge of the shoulder.

The "Tamper" Ballast Equalizer (Regulator) has other useful talents, too. It can be used for routine shoulder dressing, de-weeding and scarifying; to plow out tie ends for tie renewal and the distribution of new material. With its special attachments — snow blowers, plows and rotary brush cutters — the BE-17 should be a year-round boon to the railroad business.

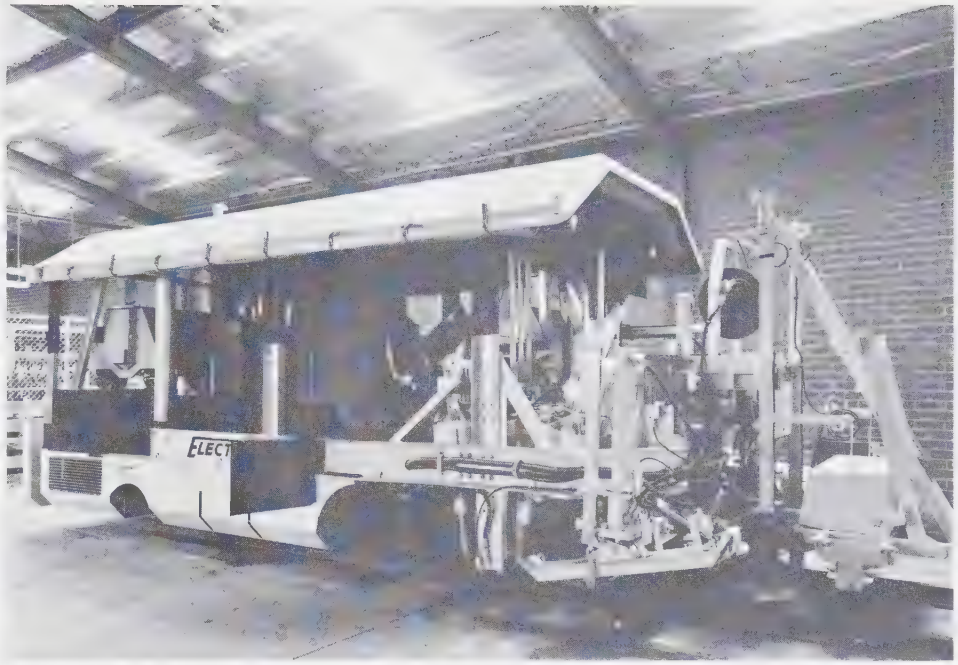


Expanding The Solar System

Solar Expansion Joints are now being exclusively manufactured and sold in Canada by the Mechanical Division, under a new licensing agreement with the Solar Division of International Harvester Company. Various sizes and types of joints are produced at the company's Trois-Rivières plant and a special group has been set up in the division to handle Canada-wide sales and delivery.

The first order to come into Trois-Rivières was a substantial one: special bellows for the Hydro-Electric Power Commission's Thermal Nuclear plant at Pickering, Ont.

First Australian-Produced "Tamper"



This Autojack Electromatic with Autoliner is the first "Tamper" railway track maintenance machine completely produced by our subsidiary, Tamper (Australia) Pty., Limited at its new location in Melbourne. It has approximately 50% Australian content, and was fabricated to the specifications and clearances of the Commonwealth Railways.

Tamper (Australia) was established by Canron in January 1967 to sell and service the company's line of "Tamper" railway track maintenance equipment. As a result of increasing market demand in Australia, it was decided to manufacture equipment locally. Within six months from the time the decision was made, the general offices were moved to the new location, the plant was outfitted, arrangements were made to secure the necessary Australian-made parts, other parts were received from North America, and the first machine was completed.

The new location has space for full equipment production and a large inventory of spare parts. It is presently geared for the production of Autojack Electromatic Tampers, Curve and Tangent Liners, Junior and Switch Electromatic Tampers, Ballast Equalizers and Spike Drivers.

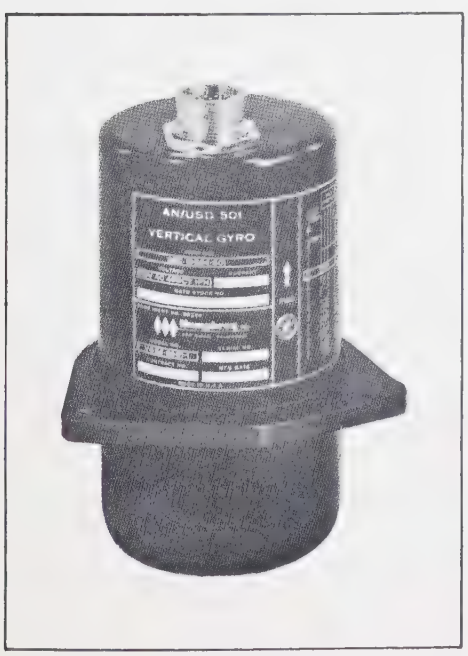
When Is A Missile Not A Missile?

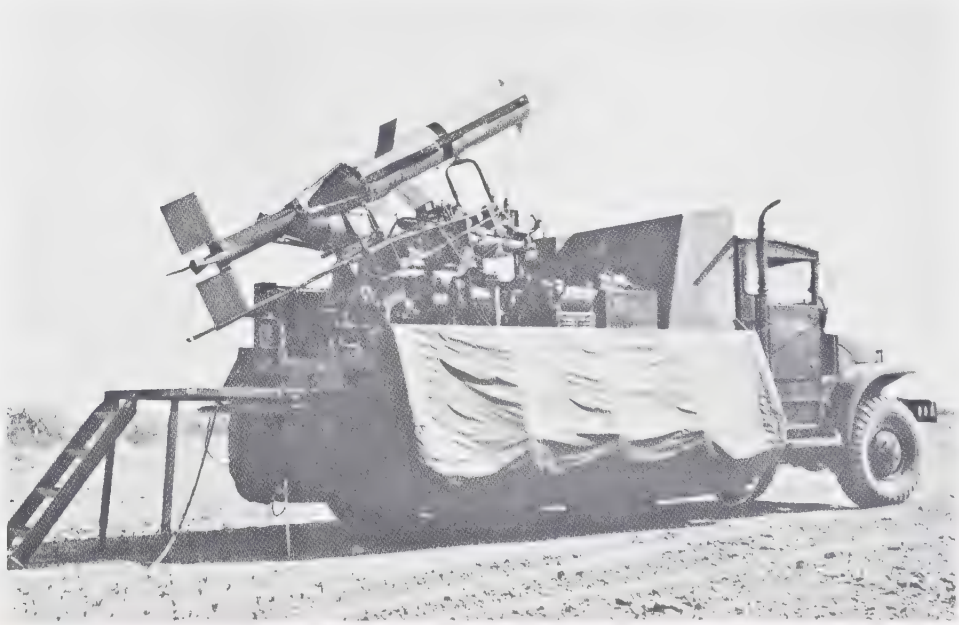
When it is a rocket-boosted, turbojet-driven surveillance drone — like the one shown here on its mobile launcher, which was recently developed by Canadair Ltd.

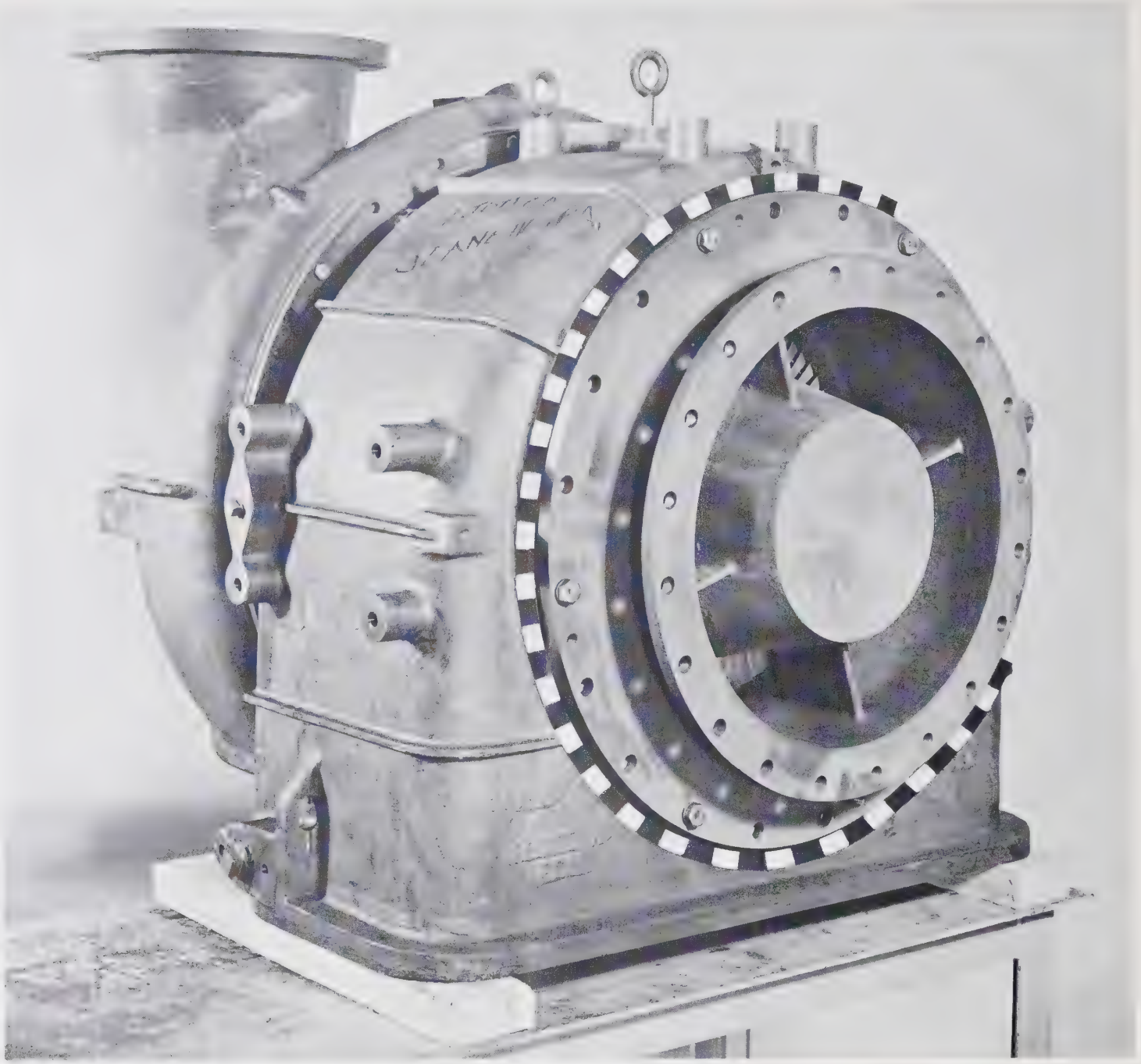
It is fast, efficient and small enough to make detection by radar almost impossible. Set on a pre-selected course, the drone is designed to speed to its destination, take photographs and return to base promptly; where it parachutes down so that the film can be removed in a matter of seconds.

One of the interesting features of this reconnaissance drone is the Humphrey Inc. gyroscope (left) which is used to direct its flight. This unit contains a special anti-tumbling device which effectively counteracts gyro dumping during the parachute recovery, while at the same time retaining 360° mechanical freedom in the roll axis.

Ideal for drones, this gyro works equally well in missiles, torpedoes, manned or unmanned aircraft systems, stabilized platforms and so on. Canadian agents for Humphrey Inc. are Railway & Power Engineering Corporation, Limited.







Ductile Ni-Resist Castings For Turbochargers

In 1940 the first true power recovery machine was introduced in the United States by Elliott Company of Jeannette, Pennsylvania. The diesel engine turbocharger is a super-charger which boosts the performance and economy of diesel engines. It is driven by high temperature exhaust gasses (up to 1,400°F) and operates at very high speeds. Thousands of Elliott turbochargers have since gone into service on more than 22,000,000 H.P. of internal combustion engines.

One of the materials used to meet the high performance standards of this equipment is Ductile Ni-Resist Type D2 as produced by our Foundry Division at the Stuart Street Plant in Hamilton. Castings are shipped to Elliot for machining and assembly into turbocharger units similar to those shown. The actual Ductile Ni-Resist casting is within the broken line in the picture.

CANRON LIMITED

DIVISIONS: Eastern Structural, Electrical, Foundry, Mechanical, Pipe, Plastic Pipe, Railway, Western Bridge.
SUBSIDIARIES: Extruded Plastic Products Limited, Matisa Matériel Industriel S.A., Switzerland, Northern Resins, Limited, Pacific Press & Shear Corp., U.S.A., Railway & Power Engineering Corporation, Tamper, Inc., U.S.A., Tamper (Australia) Pty., Ltd., The Wabi Iron Works, Limited.

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CANRON NEWS

CANRON LIMITED 1121 PLACE VILLE MARIE, MONTREAL 113, P.Q.

JULY 1969 VOLUME 2, NUMBER 1

A REVOLUTION IN SCHOOL CONSTRUCTION

Structural steel has key role

How should tomorrow's schools be built? What functions should they perform? How should they adapt themselves to a constantly changing educational environment? These were the questions to be answered by Metropolitan Toronto School Board's Study of Educational Facilities (SEF).

The survey lasted three years and resulted in Canada's first integrated open-system building programme. SEF envisaged the construction of fixed-cost, open-space schools. They were to be fully serviced with air-conditioning, mechanical, lighting, accoustical and audio-visual facilities. The interiors would be completely flexible with moveable partitions and non-load-bearing demountable walls.

Performance specifications were written for a total of ten sub-systems. Next, tenders were called for each of these sub-systems, based on a minimum requirement of 1,000,000 square feet and a maximum of 2,000,000 square feet of school construction over a two-year period.

Bids were framed in terms of unit prices for each possible component used. SEF also laid down that the components of each sub-systems bidder should interface, fit and work together with the components of the other sub-systems.

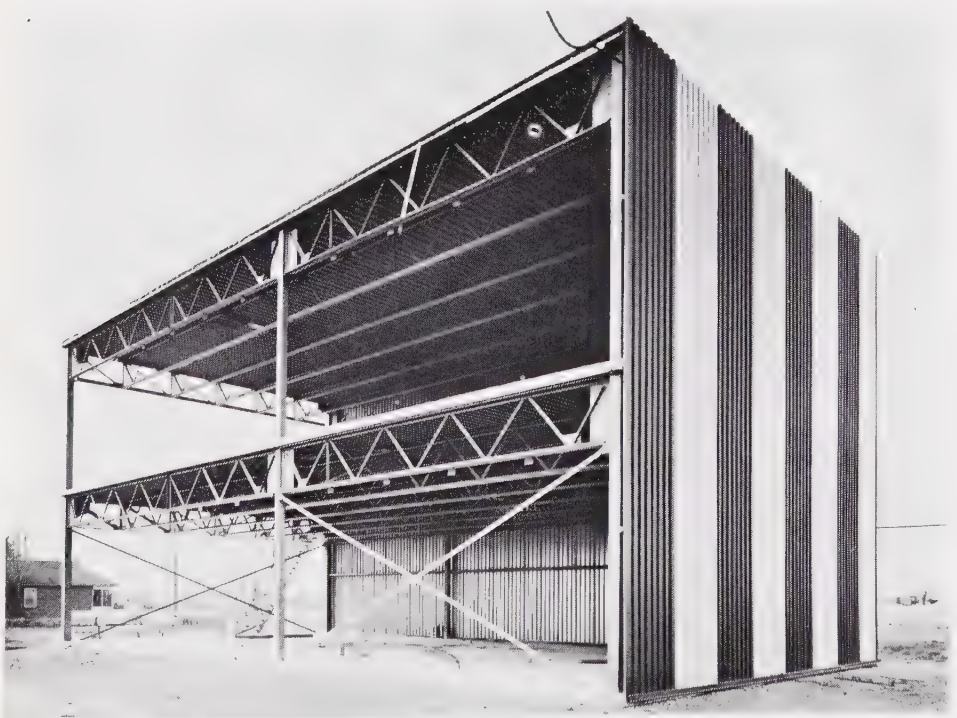
In order to bid for the structural sub-system, Canron, Eastern Structural Division, together with Anthes Steel Products and The Steel Company of Canada, formed the Anthes-Canron consortium. A project office was set up, staffed by Canron, Anthes, Stelco and Robert Halsall & Associates, Consulting Engineers. A wide range of designs and cost comparisons for the various structural components was begun.

Because of the need for compatibility of components, close contact had to be kept with bidders on other sub-systems to confer on modular specifications and tolerances.

Anthes-Canron tentatively established that main structural components would be truss type purlins 36" deep 55,000 p.s.i. yield material spaced at 5' O.C. and spanning in 5' increments up to 65', supported on truss type girders 36" deep — 44,000 p.s.i. yield spanning in 5' increments up to 30', the columns 6", 7" and 8" square tubes of 50,000 p.s.i. yield material, the roof deck 1½" — 22 gauge metal deck, and floor 1½" — 22 gauge Hi-bond steel deck with 2½" of concrete.

The purlins will be fabricated by Anthes, the girders, columns, bracing by Canron. All structural steel will be erected by Canron. The metal roof and floor deck will be supplied and installed by Westeel-Rosco.

The connection of the purlins to the



The two-storey prototype school frame erected at the Rexdale plant of Canron, Eastern Structural Division. The pilot project enabled the consortium to eliminate any possible erection problems, confirm the design concept and check out interfacing with other sub-system components.

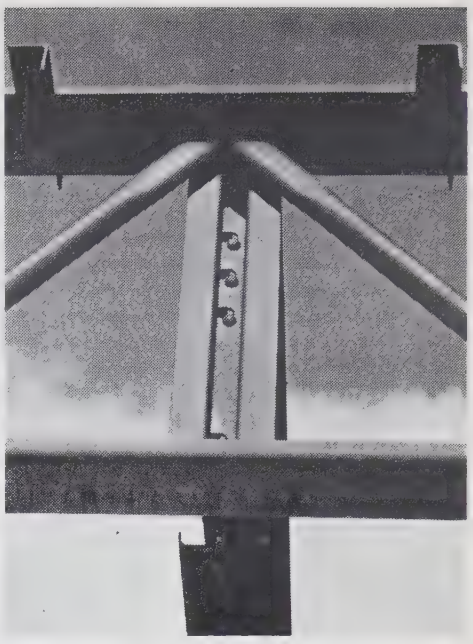
girders is by the patented Anthes V-Lok connector, which is a simple mechanical coupling with no field bolts or other loose pieces. The male portion is engaged into the female sockets as the purlin is being lowered into position. The purlin is then driven down with a hammer and the connection is complete.

After most components had been finalized, a two-storey 3,600 square foot prototype school frame was erected. This provided the best opportunity of demonstrating the superiority of the design and configuration, and of enabling checks of interfacing capability to be made with other sub-system components. It was soon apparent that only minor component changes were necessary. An accurate cost estimation was then made and bid prices established.

On January 7, 1969, the bid package was submitted to SEF. After a computerized evaluation, Anthes-Canron was designated as the successful sub-system tenderer for structure.

The construction of a small test school in Scarborough, Ontario, is now under way. Upon completion and acceptance by SEF, a contract will be signed for the supply and erection of the structural components of a total of 32 schools in Metro Toronto. It is estimated that this new SEF system construction programme will cut costs by as much as $3½ million.

The building of the first of the SEF schools is due to start later this year; all 32 will be completed within two years. Canron are proud to play their part in this SEF project, which brings a new rationalization to the building of schools . . . provides flexibility to match new curricula and new teaching methods and facilities...and holds out the promise of more efficient educational practices and facilities for our children.

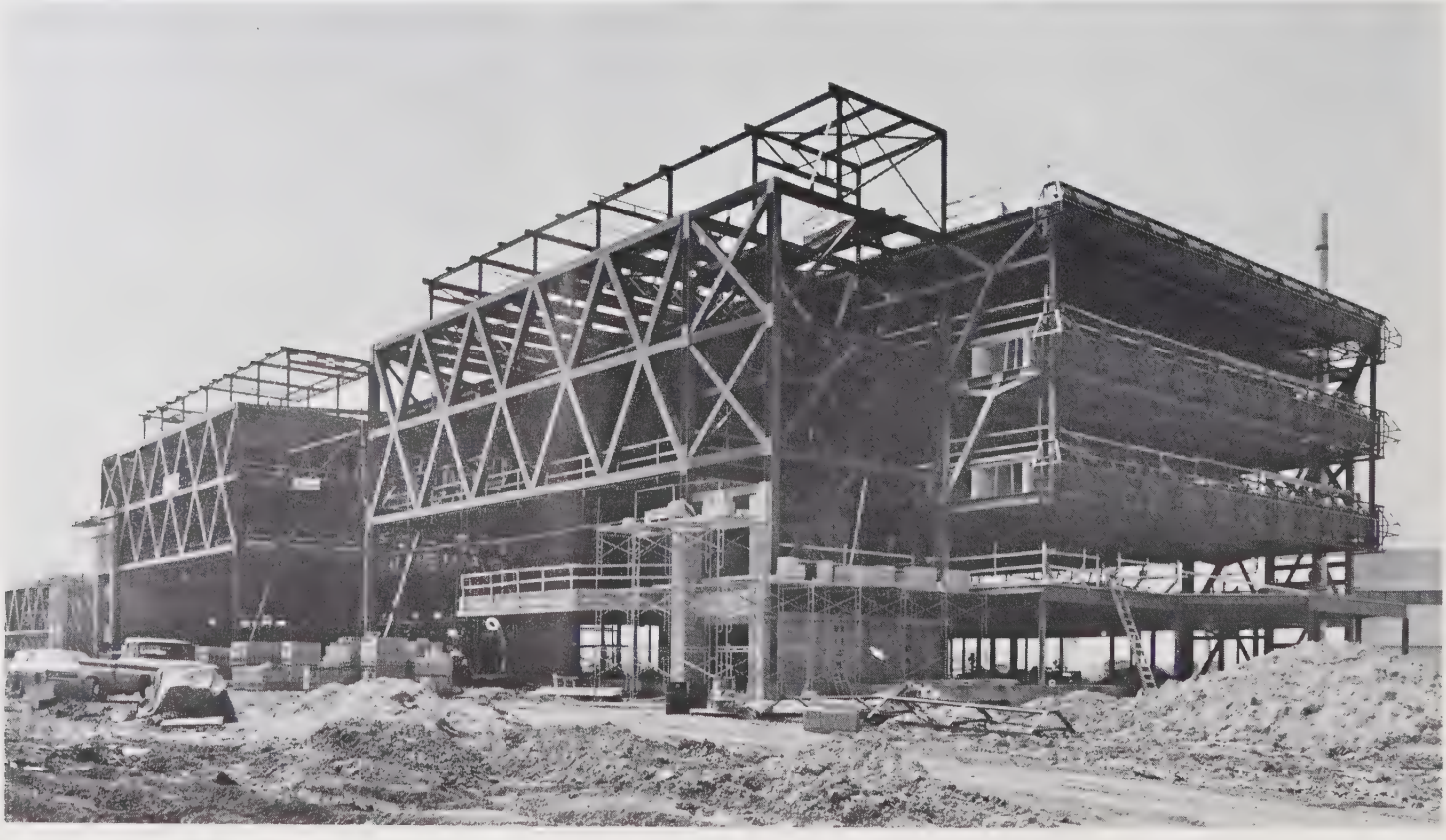


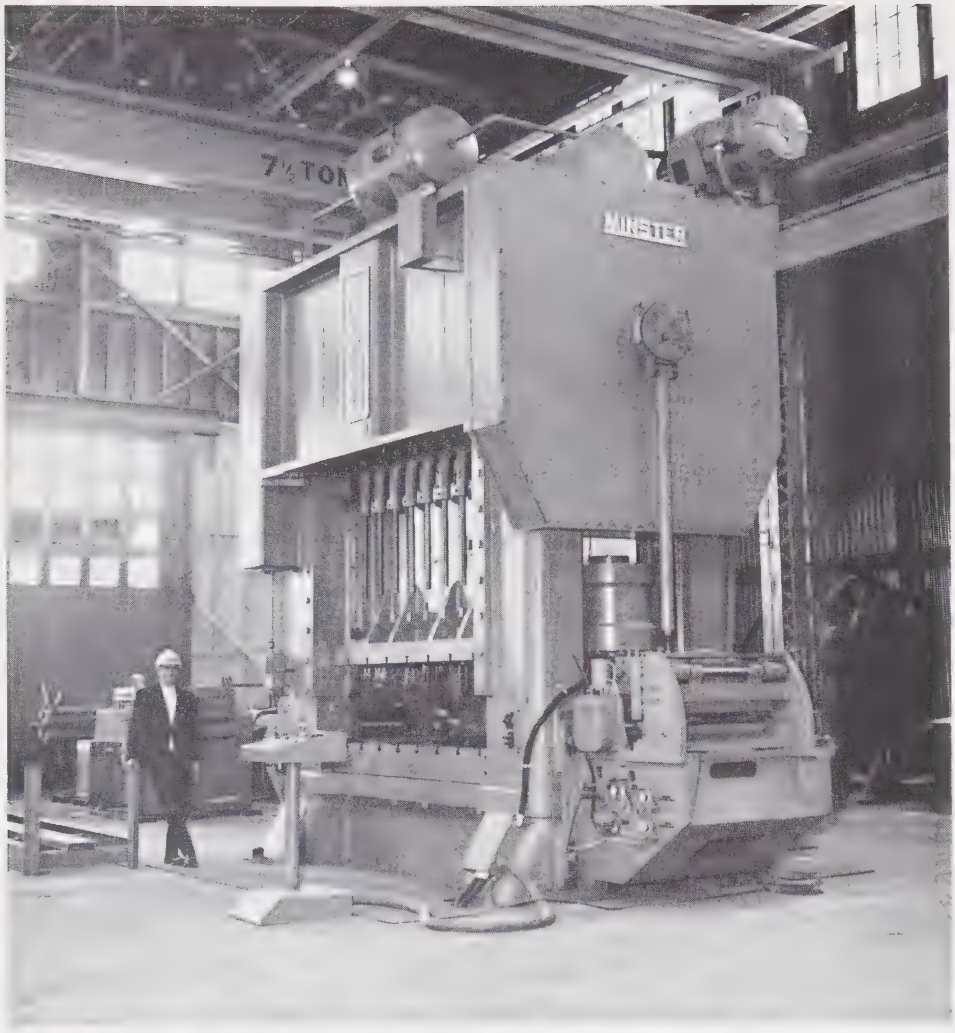
The V-Lok connector eliminates bolting of purlins to girders and cuts erection time.

Humber College structure erected in six weeks

A recently-completed contract by Canron Eastern Structural Division, involved the supply and erection of structural steel for the Humber College of Applied Arts and Technology in Etobicoke, Ontario. Delivery of material was extremely critical, so shipment was co-ordinated with fabrication. This consisted of 1300 tons of structural steel — comprising 37-ton steel trusses, 28ft deep and 80ft long, together with 18-ton bents, 15ft wide and 65ft high.

Bents and trusses were made of welded wideflange sections, which were assembled in the shops to be transported in the largest sizes possible. All fabrication for the main structure was completed in five weeks — which enabled the erectors to begin work one week ahead of schedule. Erection of the basic structure, along with other miscellaneous items required by the contractors, took only six weeks. Architects are Allward & Gouinlock and engineers are C. D. Carruthers & Wallace.





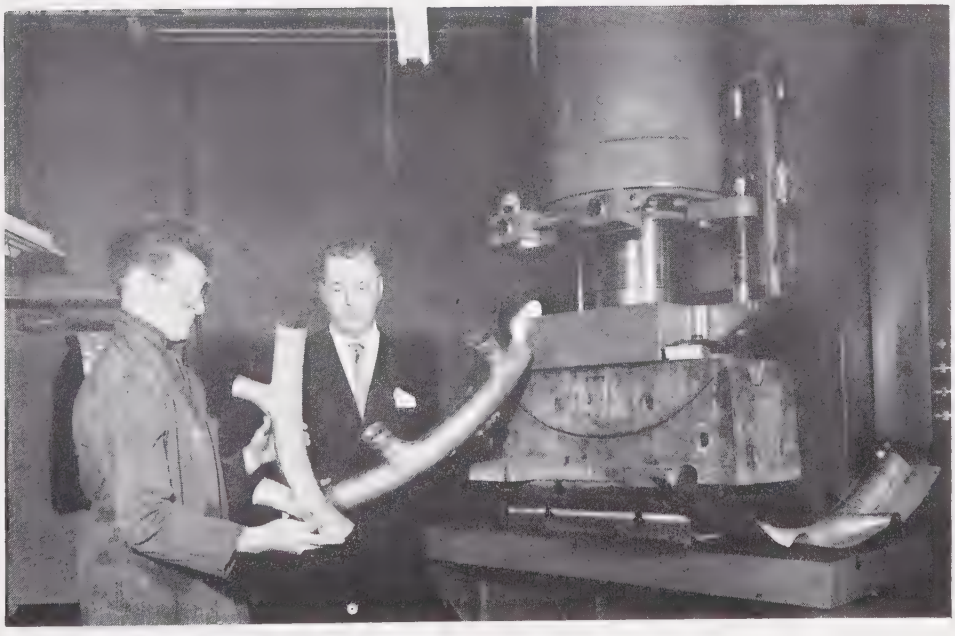
Minster press at Sorel

One of the largest capacity single-action presses manufactured in Canada was recently supplied by Canron, Mechanical Division, to Marine Industries in Sorel, Quebec. Built at Canron's Trois-Rivières plant, this Minster E 2-800 has a bed area of 8′ by 5′ and a capacity of 800 tons. It will be used to produce generator laminations for the Churchill Falls Power Development.

Bleach washer drums for new pulp and paper mill

Canron, Mechanical Division, is manufacturing all main equipment for the bleach plant of St. Anne-Nackawic Pulp & Paper Company's new mill under construction in New Brunswick. This mill is expected to start production in 1970 and the bleach plant is designed to produce 500-600 tons per day of high quality bleached kraft pulp.

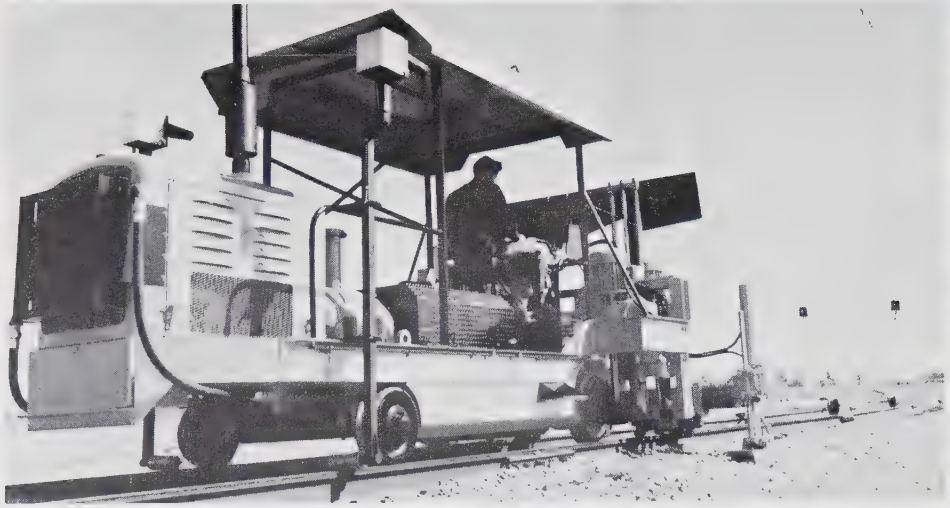
As part of this million dollar contract, Canron recently shipped two-bleach washer drums, 11′6″ diameter by 20′ face, from Trois-Rivières plant to the mill site.



Pacific PressFormer in action

The photo shows Canron's Bill MacLellan viewing exhaust collectors formed on a 250-ton Pacific Hydraulic PressFormer installed at Noorduyn Norseman Aircraft Limited in Montreal. This complicated part is formed from type 321 stainless steel .050″ thick. The long power stroke permits the metal to flow smoothly to form a perfect section.

The PressFormer is a "C" Frame Gap type press designed to be a versatile press for job shop work or for high production requirements. It is available in 50 to 1,000-ton ratings and is manufactured by Pacific Press & Shear Corp. at Mount Carmel, Illinois, U.S.A. and by Canron, Mechanical Division, at Trois-Rivières, Quebec.



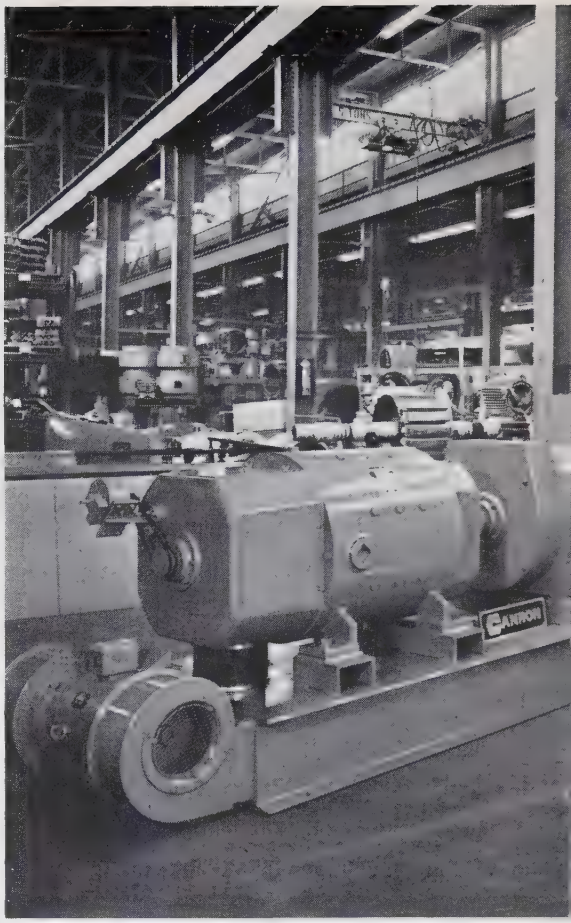
New attachment for Junior or Switch Electromatic Tamper

The new Junior Foreman, an attachment for either the Junior or Switch Electromatic Tamper, makes these machines the most versatile and economical on the market.

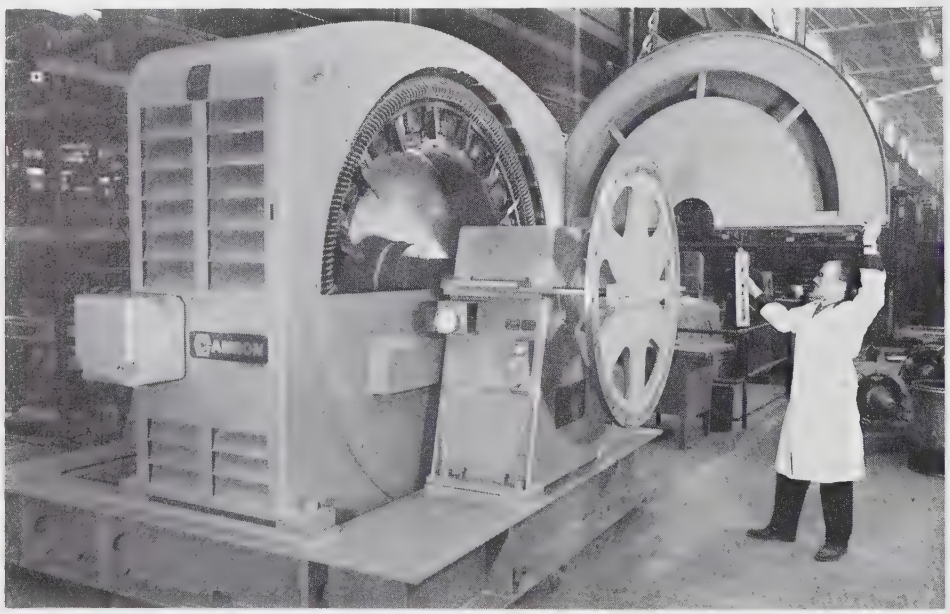
It was developed to meet the needs of the railroads for an economical medium-production tamper. With only one operator, the machines can tamp, lift, line, spot and joint peak under just about any track condition.

Incorporated into the attachment is Tamper's well-proven and highly accurate infra-red light beam referencing system for surfacing and lining, the same system as used on Autojack Electromatic Tampers.

Shown here, is a Junior Foreman (Model JF-23) undergoing final testing with a Junior Electromatic Tamper before delivery to the Penn Central Railroad.



Motor-alternator sets for rese

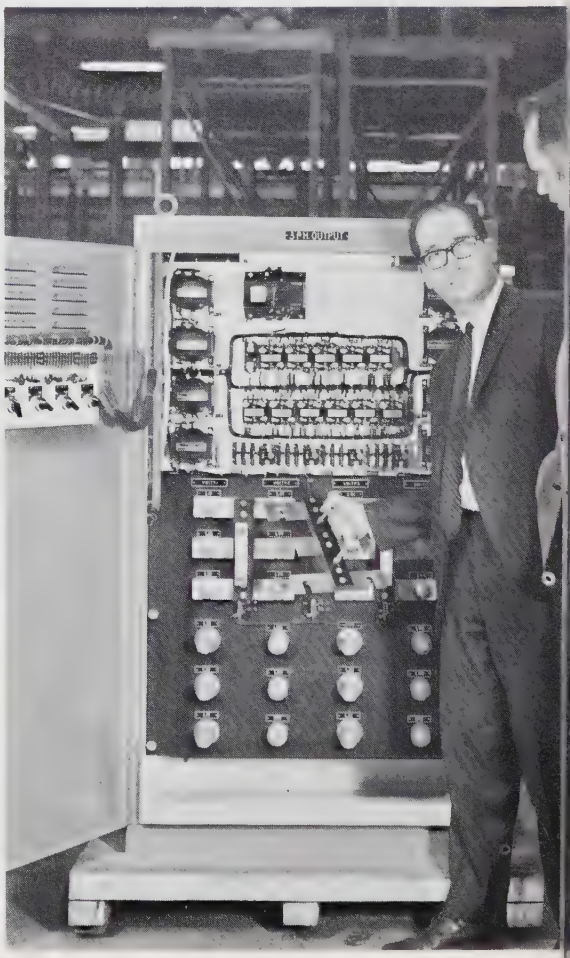


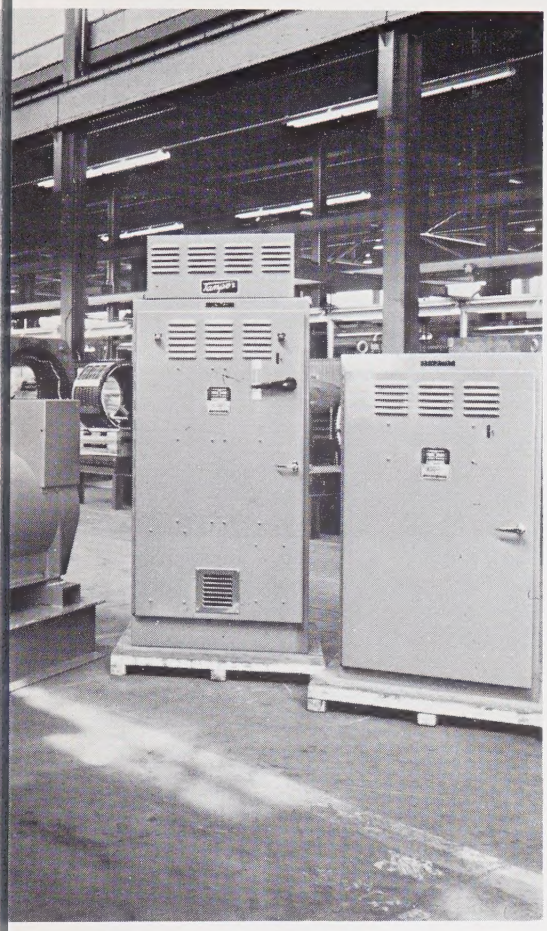
Large motors for Manitoba Mill

Canron, Electrical Division, recently shipped five 1750 HP, 4160 Volts, 225 RPM "Tamper" synchronous motors to International Nickel Co. at Thompson, Manitoba.

The large motors are used for driving ore grinding ball mills and have special covers to overcome the problem of spillage from the mill.

Occasionally, wet ore slurry will spill out of the ball mill and over the motor. The enclosures prevent the slurry from entering the motor where abrasive action could damage the winding. They also minimize the entrance of water when the unit is subsequently cleaned by spraying with a hose.





A plastic pipe first

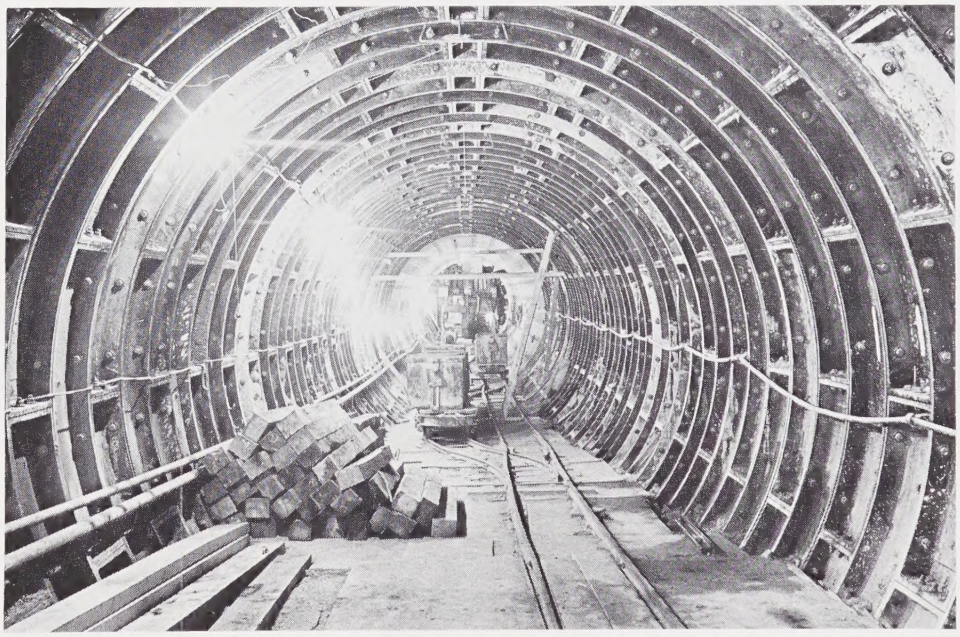
This plastic pipe installation at Polyvalent School in Berthierville, Quebec, marks a new advance in the use of plastic pipe. It is the first large building making use of ABS/DWV drainage plastic pipe for its main drainage system.

The expanded application of ABS/DWV has been made possible by a recent change in building codes which previously limited its use to smaller installations. Cooperating on the project, which was completed early this year, were the Department of Education, the consulting engineering firm of Leroux, Leroux, Nantel, Papin & Associates of Montreal, together with Canron's subsidiary, Northern Resins Limited, supplier of the plastic piping system.

ch

Canron, Electrical Division, has supplied four variable frequency motor-alternator sets and associated controls to the National Research Council. They will be used to power small, high speed motors on model aircraft in wind tunnel experiments. The four sets, each rated 140 KW, 60-500 Hz, may be run separately or paralleled in several combinations to supply larger loads.

One of the motor-alternator sets, including control and output cubicles, is shown above. In the bottom photo, the features of the output cubicle, containing paralleling links, selector switches and relay logic, are discussed by Dick Hills, Manager, Drive Systems and Bob Johnston, Drive Systems Application Engineer.



Tunnel liners for Toronto's subway extension

At Canron, Foundry Division, work on the 28,000 tons of cast iron tunnel liners, contracted by the Toronto Transit Company for the 3.75-mile Yonge Street subway extension, is right on schedule. Delivery of the liner segments, which began in October of last year, will be complete by the middle of 1971.

The liners are supplied in segments and, when joined together, form the subway's 16' diameter twin tunnels.

Canron first entered the Toronto subway picture ten years ago, with a $3.8 million liner contract for the University Avenue spur. At the same time, Mechanical Division won another substantial contract to supply shields.

In 1963, Canron cast iron linings were ordered on the Bloor-Danforth contracts and, as a direct result of this, for a sewer tunnel in New York City.

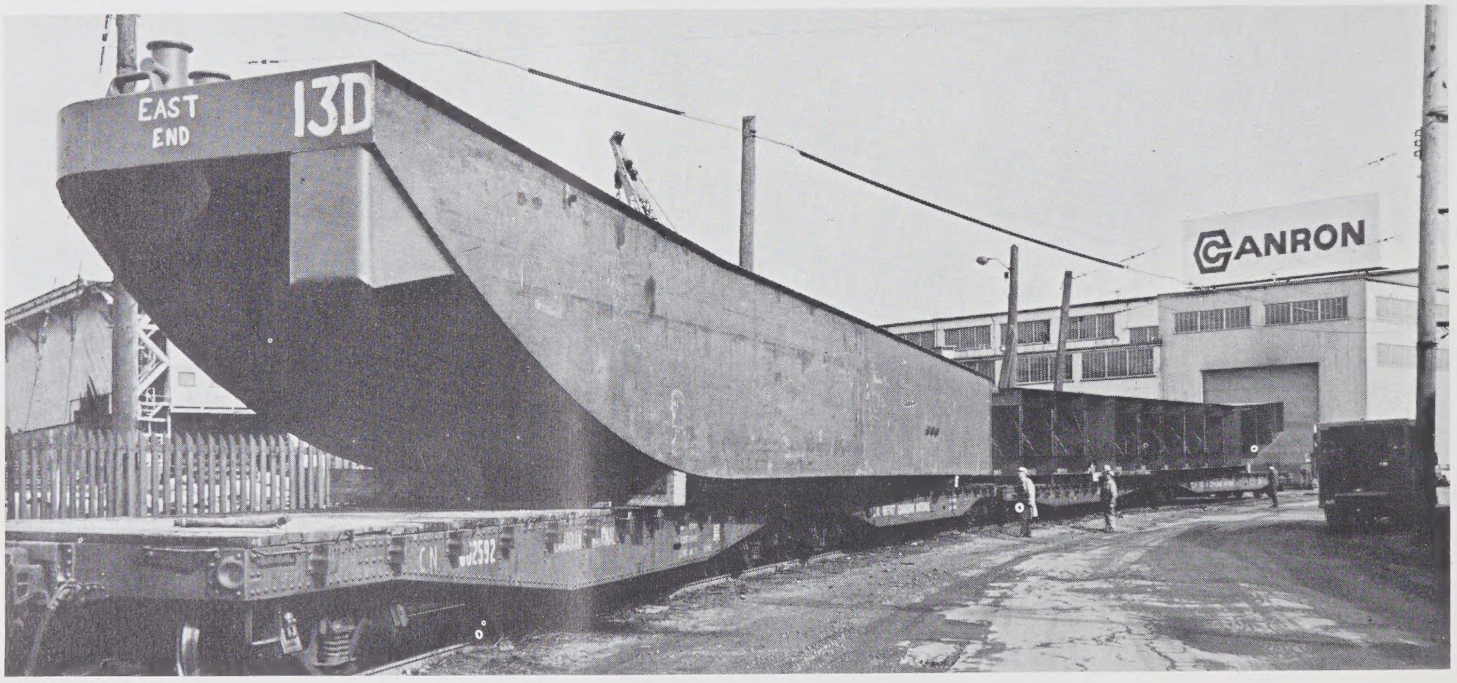
This latest contract — won from stiff British and Japanese competition and worth more than $6.2 million — brings Canron's total tunnel liner production to more than 75,000 tons.

CN Second Narrows railway bridge completed

Last year, Canron, Western Bridge Division, made engineering history by launching and floating two 2,000-ton tower spans into position at Vancouver's Burrard Inlet.

In January 1969, the last of the huge structural steel sections, the 2,250-ton lift span, was lifted into place on the CN Second Narrows crossing and the mammoth erection job was successfully completed.

The impressive new lift span bridge, Canada's largest, has a high tide clearance of 153' with a 500' width. Designers are Foundation of Canada Engineering Corporation, and Hardesty and Hanover of New York.



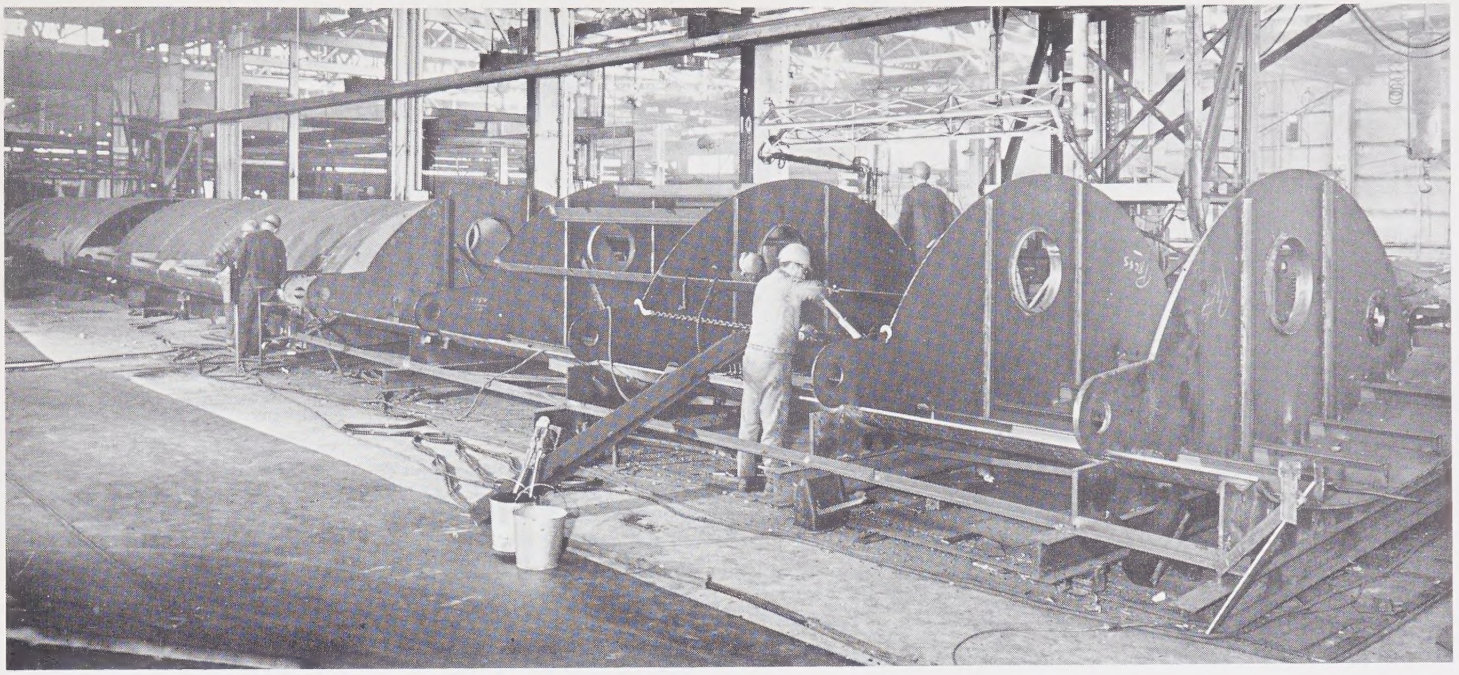
Barges built for punishment

These steel barges, at Canron's Western Bridge Division shops in Vancouver, are several of approximately 70 built over the last 23 years for Northern Transportation Company. They have a rough life ahead, operating in the McKenzie River — which is unfrozen for only 4½ months each year — and in the strip of Arctic Ocean below the permanent polar ice, where the navigation season lasts only six or seven weeks. They will be used to transport oil and other supplies to exploration sites, weather stations, missions and other settlements on the Arctic Ocean. Service will extend from Alaskan ports on the west to Canadian ports such as Cambridge Bay on Vancouver Island — and Shepherd Bay and Spence Bay to the east. Often, no wharves will be available; unloading will only be possible when they have been pushed on to the beach, after which cargo will be removed by cats and fork-lifts.

Each barge measures 200 ft by 50 ft and weighs 350 tons. They are shipped in eight sections (two of which are shown here on flat cars) and are welded together in the north. They are then loaded with deck cargo and towed from the railhead, and from Northern Transportation's main terminal at Hay River on Great Slave Lake, a distance of 500 miles northwest to Norman Wells.

At Norman Wells, the oil cargo is pumped into inside compartments. From here they go another 500 miles to Tuktoyaktuk, Northern Transportation's trans-shipping point on the Arctic. Then, free of the draught restrictions imposed by the shallow McKenzie River, further cargo is loaded.

In the winter, most of the barges are stored at Hay River — but others await the summer frozen in the Arctic ice.



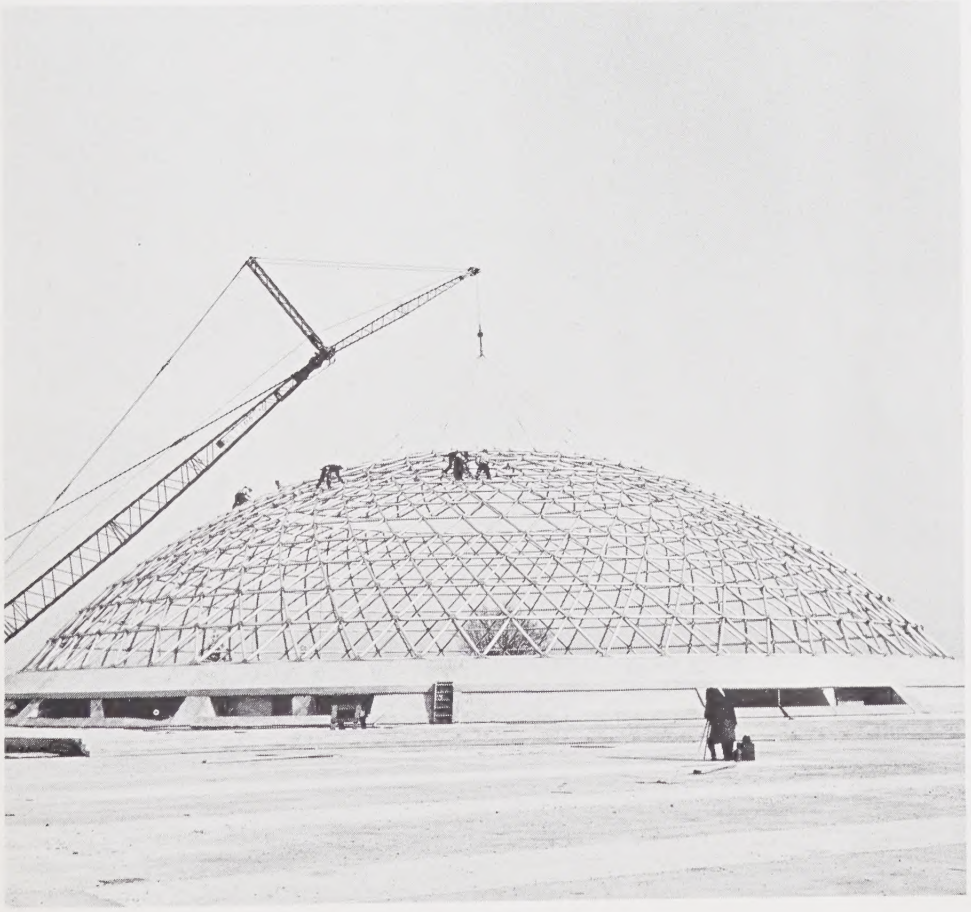
Flood control for the Assiniboine River

At Vancouver, Canron is completing the fabrication of steel gates for the inlet works at Portage La Prairie. They will be used to control flooding by diverting the waters of the Assiniboine River into Lake Manitoba.

The contract called for the design, fabrication and installation of eight gates of various types, together with all control machinery, and heaters to prevent equipment from icing up.

Shown here under construction are two bascule gates, the first to be designed in Canada. When installed by Canron, they will be the largest in Canada. Operating in a permanently submerged position across the Assiniboine River, these 75' wide gates will be swung up or down to obstruct and divert the river flow northward to Lake Manitoba during times of flood.

Consultants for the project are Acres Western Limited. The Water Control and Conservation Branch of the Manitoba Department of Highways are the owners.



Conservatory Dome at Vancouver

Canron, Western Bridge Division, recently assembled and erected the Triodetic Dome for the new Conservatory building at the top of Little Mountain in Queen Elizabeth Park, Vancouver, B.C. This single-layer Triodetic structure rises 34 feet and has a 140-ft base diameter. Erection was completed in 775 man-hours.

The building will house a variety of tropical and semi-tropical plants; its roof will therefore be transparent, consisting of plexiglass panels of triangular shape. Owned by the City of Vancouver, the Conservatory will offer a beautiful view of the surrounding area.

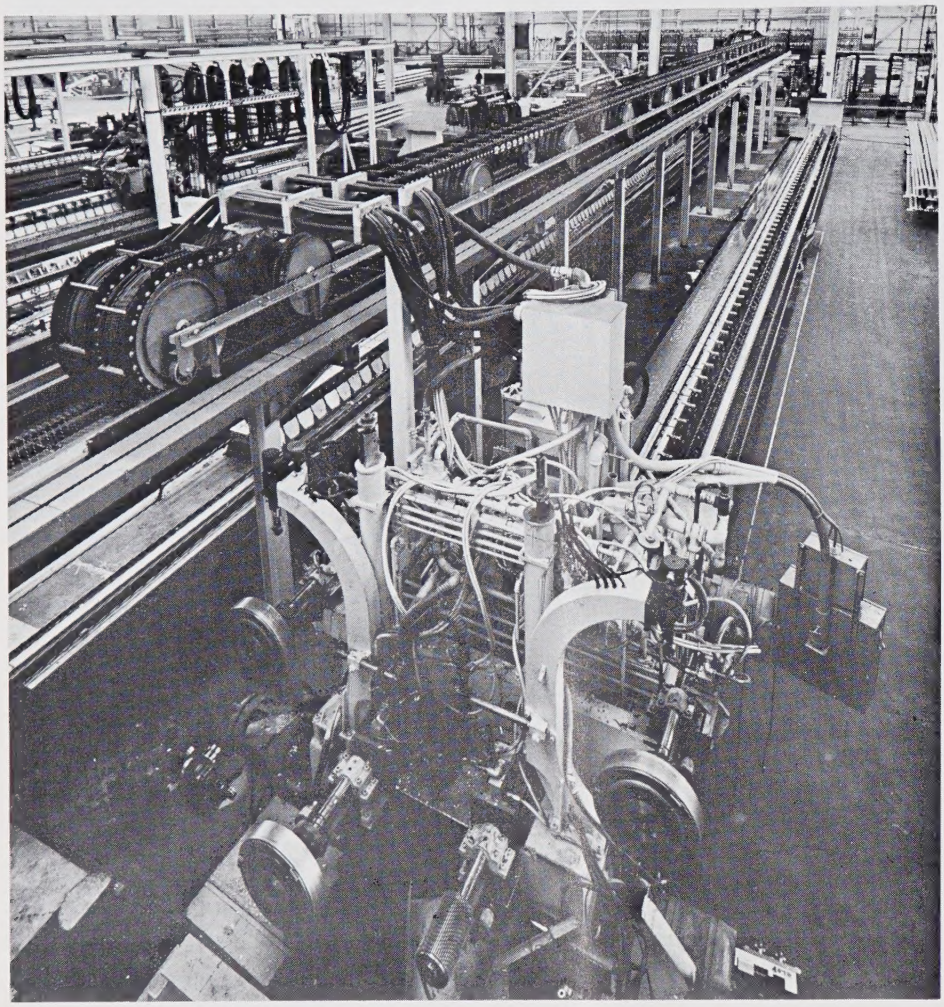
Structural components were fabricated from Alcan tubing in Ottawa by F. Fentiman & Sons Limited and shipped some 3,000 miles by truck to the site. The dome was designed by Triodetic Structures Limited, Ottawa, in conjunction with special consultants, Dr. D. T. Wright and C.B.A. Engineering, Vancouver, B.C.

Powertrak on the wing

A total of six Gleason Powertrak Model 224 installations have recently been supplied by Railway & Power Engineering Corporation, Limited to the Douglas Aircraft plant in Toronto. They carry cables and hoses to the milling heads as they travel from end to end of the wing spars of DC-10 aircraft, a distance of 105'. Reports from Douglas Aircraft indicate that the smooth operation of the Powertrak equipment produces a highly superior finish on the wing spars as well as adding extra "tidiness".

In the upper left of the photo, can be seen the pendant systems which are being replaced by the Powertrak equipment.

Two further orders for similar Powertrak installations for wing-trimming machines have been placed by Douglas Aircraft.



Export to eastern Europe

At the port of Montreal, an Autojack Electromatic Tamper is shown prior to loading aboard the Russian vessel, M.S. Ivan Moskovin. Designed and manufactured by Canron, Railway Division, it is one of several "Tamper" railway track maintenance machines recently shipped to Russia and Czechoslovakia.

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PRINTED IN CANADA